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Wednesday
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WASHINGTON, DC

WHEN: November 14, 2000, at 9:00 a.m.

WHERE: Office of the Federal Register
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Reader Aids

Consult the Reader Aids section at the end of this issue for phone numbers, online resources, finding aids, reminders, and notice of recently enacted public laws.

CFR PARTS AFFECTED IN THIS ISSUE

A cumulative list of the parts affected this month can be found in the Reader Aids section at the end of this issue.

Federal Register

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Presidential Documents

Title 3—

The President

Proclamation 7368 of October 20, 2000

National Day of Concern About Young People and Gun Violence, 2000

By the President of the United States of America

A Proclamation

Every day in America, approximately 10 children are shot and killed. Children 15 years old and younger are murdered with firearms at a higher rate in this country than in 25 other industrialized countries combined. These tragedies are an urgent reminder that we must not waver in our national commitment to reduce gun violence and to make our society safer for our children.

We are beginning to see some progress in our efforts. Since 1992, the national violent crime rate has dropped by more than 20 percent; violent crimes committed with firearms have dropped by 35 percent; and the firearms homicide rate has fallen over 40 percent. We have achieved much of this progress by embracing a collaborative, community-based approach to gun crime prevention and reduction.

Gun violence issues differ in each community, and no single program or approach works everywhere. In response to a directive I issued last year to help reduce gun violence and save lives, United States Attorneys and the Bureau of Alcohol, Tobacco, and Firearms Field Division Directors for each of our Nation's 94 Federal judicial districts have developed locally coordinated gun violence reduction strategies. Working closely with local law enforcement, elected officials, and other community leaders, they are tailoring plans to local needs and developing strategies to prevent gun crimes from occurring and crack down on gun criminals.

A major goal of our strategy to reduce gun violence and ensure the safety of our children is to keep guns out of the wrong hands. We passed the Brady Act to help accomplish this goal by requiring that every person who purchases a firearm from a federally licensed dealer submit to a background check. To date, Brady background checks have prevented more than 536,000 felons and other prohibited individuals from acquiring firearms. We also succeeded in banning assault weapons, making ''zero tolerance'' for guns in schools the law of the land, and passing legislation that prohibits juveniles from possessing handguns. However, our determination to reduce gun violence must not stop there. I have called on the Congress to build on these measures by passing legislation that closes the gun show loophole, mandates child safety locks with every handgun sold, and bans large-capacity ammunition clips.

We have also provided funding for more than 100,000 community police officers; for the Safe Schools/Healthy Students initiative to reduce youth violence through collaborative, community-based efforts; and for the 21st Century Community Learning Centers—safe places where students can go after school to participate in constructive activities and avoid the dangers of guns, gangs, and drugs.

But none of these efforts can succeed without the commitment of America's youth. It takes courage to resist negative peer pressure; it takes character to settle disputes without resorting to violence; and it takes a sense of personal responsibility to tell an adult when others fail to live up to these standards. On this National Day of Concern, I ask every young American to sign a Student Pledge Against Gun Violence, which contains a solemn oath never to bring a gun to school, never to use a gun to settle a dispute, and to use their influence to keep others from using guns. By doing so, they will take an important, life-affirming step toward a brighter and safer future.

NOW, THEREFORE, I, WILLIAM J. CLINTON, President of the United States of America, by virtue of the authority vested in me by the Constitution and laws of the United States, do hereby proclaim October 21, 2000, as a National Day of Concern About Young People and Gun Violence. On this day, I call upon young people in classrooms and communities across the United States to voluntarily sign the Student Pledge Against Gun Violence. I also call upon all Americans to commit themselves anew to helping our Nation's young people reject violence and to make our schools and neighborhoods safe places for learning and recreation.

IN WITNESS WHEREOF, I have hereunto set my hand this twentieth day of October, in the year of our Lord two thousand, and of the Independence of the United States of America the two hundred and twenty-fifth.

[FR Doc. 00–27597
Filed 10–24–00; 8:45 am]
Billing code 3195–01–P

Rules and Regulations

Federal Register

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OFFICE OF PERSONNEL MANAGEMENT

5 CFR Part 330

Recruitment, Selection, and Placement (General)

CFR Correction

In Title 5 of the Code of Federal Regulations, parts 1 to 699, revised as of January 1, 2000, on page 210, in the second column, the first §330.702 is removed.

[FR Doc. 00–55516 Filed 10–24–00; 8:45 am]

BILLING CODE 1505–01–D

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

7 CFR Part 319

Foreign Quarantine Notices

CFR Correction

In Title 7 of the Code of Federal Regulations, parts 300 to 399, revised as of January 1, 2000, on pages 322 and 323, beginning in the first column, the second §319.74–3 and §319.74–4 should be removed.

[FR Doc. 00–55515 Filed 10–24–00; 8:45 am]

BILLING CODE 1505–01–D

DEPARTMENT OF AGRICULTURE

Farm Service Agency

7 CFR Part 735

RIN 0560–AF13

Amendments to the Regulations for Cotton Warehouses Regarding the Delivery of Stored Cotton

AGENCY: Farm Service Agency, USDA.

ACTION: Final rule.

SUMMARY: This final rule codifies the delivery standard for cotton stored in warehouses licensed under the United States Warehouse Act (USWA) and those warehouses issuing electronic warehouse receipts under the USWA (7 U.S.C. 241 *et seq.*). The final rule adopts, with minor changes based on public comments, a proposed rule published in the **Federal Register** on May 28, 1999, (64 FR 28938) and an advanced notice of proposed rulemaking (ANPRM) published in the **Federal Register** on May 26, 1998 (63 FR 28488). The Department of Agriculture (USDA) is taking this action as the result of two U.S. District Court orders that remanded USDA to define the statutory phrase ''without unnecessary delay'' as set forth in the USWA. Concurrently, several segments of the cotton industry requested the implementation of a uniform national cotton shipping standard for the delivery of stored cotton. This final rule amends the regulations covering cotton to define the USWA statutory phrase ''without unnecessary delay'' as used in the USWA, and sets a standard for determining whether a warehouse operator delivers stored cotton timely by establishing a uniform cotton shipping standard for the delivery of stored cotton.

EFFECTIVE DATE: October 25, 2000.

FOR FURTHER INFORMATION CONTACT: Steve Mikkelsen, Deputy Director, Warehouse and Inventory Division, Farm Service Agency, STOP 0553, 1400 Independence Avenue, SW., Washington, DC 20250–0553; telephone (202) 720–2121 or FAX (202) 690–3123, e-mail: Steve__Mikkelsen@wdc.fsa.usda.gov. Persons with disabilities who require alternative means for communication of regulatory information (braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720–2600 (voice and TDD).

SUPPLEMENTARY INFORMATION:

Executive Order 12866

The Office of Management and Budget has reviewed this final rule and determined the rule to be significant for the purposes of Executive Order 12866.

Cost-Benefit Assessment

A Cost-Benefit Assessment (CBA) was prepared. The costs associated with the implementation of the rule will be minimal to all parties involved. The CBA summarized the cost and benefit impact of the rule as follows:

The cotton industry will benefit from USDA establishing a shipping standard that it can apply through arbitration or legal proceedings to determine whether a warehouse operator is delivering stored cotton ''without unnecessary delay.'' Establishment of a uniform shipping standard will help: (1) Maintain the competitiveness of U.S. cotton in domestic and world markets; (2) improve the prices that producers receive in those areas affected by delivery delays; (3) eliminate any disruption in commerce due to uncertainty of delivery expectations; and (4) a standard that may be applied to arbitration or legal proceedings to determine whether a warehouse operator is delivering cotton ''without unnecessary delay.''

Copies of the CBA are available upon request from the Warehouse and Inventory Division, Farm Service Agency, STOP 0553, 1400 Independence Avenue, SW., Washington, DC 20250–0553.

Executive Order 12988

This final rule has been reviewed in accordance with Executive Order 12988. The provisions of this final rule do not preempt State laws, are not retroactive, and do not involve administrative appeals.

Environmental Evaluation

An environmental evaluation has determined that this action will not have significant impact on the quality of the human environment. Therefore, neither an Environmental Assessment nor an Environmental Impact Statement is needed.

Executive Order 12612

It has been determined that this final rule is consistent with the Federalism principals espoused in Executive Order 12612, and does not warrant the preparation of a Federalism Assessment.

Executive Order 12372

This program/activity is not subject to the provisions of Executive Order 12372, which require intergovernmental consultation with State and local officials. See the notice related to 7 CFR part 3015, subpart V, published at 48 FR 29115 (June 24, 1983).

Unfunded Mandates Reform Act of 1995

This final rule contains no Federal mandates under the regulatory provisions of Title II of the Unfunded Mandates Reform Act (UMRA) of 1995 for State, local, and tribal governments or the private sector. Thus, this final rule is not subject to the requirements of sections 202 and 205 of the UMRA.

Paperwork Reduction Act

The amendments set forth in this rule do not affect information collection or record keeping requirements.

Regulatory Flexibility Act

It has been determined that the Regulatory Flexibility Act is not applicable to this final rule because this rule will not have a significant effect on a substantial number of small businesses. Licensing under the USWA is strictly voluntary upon the part of each warehouse operator.

Background

Since the early 1960's, the timely delivery and shipping of stored cotton (cotton flow) has been a persistent problem throughout the cotton industry. While cotton shippers and cotton merchants require timely delivery and shipping to meet the demands of the marketplace, cotton warehouse operators contended that delivery and shipping demands placed on them by shippers and merchants are unreasonable and exceeded warehouse delivery capabilities. When delivery and shipping delays began to occur during the 1995/96 crop year several cotton shippers filed complaints with the Farm Service Agency (FSA). These shippers requested FSA to investigate cotton shipment delays and to suspend the Federal license of those warehouses that had not delivered cotton ''without unnecessary delay'' as required by the USWA (7 U.S.C. 241 *et seq.*). FSA personnel investigated and found that a lack of common terminology and lack of a standard process for requesting services may have contributed to the confusion and appearance of longer shipping delays than actually occurred.

Besides filing complaints with FSA, several shippers brought action in U.S. District Court against two cotton warehouse operators. In each case the key issue for the courts was that USDA had not issued regulatory guidance on the use and meaning of the statutory phrase ''without unnecessary delay'' contained in the USWA. Ultimately, the shippers elected to dismiss their suits opting instead to request that the statutory phrase ''without unnecessary delay'' as set forth in the USWA be remanded to USDA for further determination under the doctrine of primary jurisdiction. At the same time, several segments of the cotton industry requested USDA to implement a national uniform cotton shipping standard.

As a result of these events, on May 26, 1998, FSA published a ANPRM in the **Federal Register** (63 FR 28488). The ANPRM sought public comments on two options and asked specific questions regarding a proposed National Cotton Flow Standard. Option I contained methods for defining ''without unnecessary delay,'' established both a uniform cotton shipping standard and a dispute resolution mechanism, but limited further government involvement in regulating the standard. In addition to the items contained in Option I, Option II offered standardized definitions, terminologies, dispute mediation, a national cotton flow shipping status report, and operated with user fees under a greater USDA regulatory role. Public comments favored Option I and strongly expressed a conviction that USDA should establish a cotton shipping standard and allow enforcement just to be handled by the cotton industry without; USDA involvement, assessment of user fees, or increased governmental costs. A complete summary of the comments received in response to the ANPRM can be found in the proposed rule in the **Federal Register** of May 28, 1999 (64 FR 28938).

FSA published a proposed rule seeking public comments on setting forth a national cotton shipping standard that defined ''without unnecessary delay''. See, May 28, 1999, **Federal Register** (64 FR 28938). This standard was based upon weekly deliveries of at least 4.5 percent of a warehouse operator's licensed storage capacity, Commodity Credit Corporation (CCC) approved storage capacity, or other storage capacity as determined to be in effect for the week of the shipment. The industry presented 4.5 percent as the level that would best expedite the delivery and shipment of U.S. cotton. The industry also recommended that CCC's Cotton Storage Agreement (CSA) should be the vehicle of regulatory authority used by USDA to establish the cotton flow standard. USDA believed that a delivery and shipping standard should not be solely based on the CSA, because the CSA and any standard that grew out of it only applied to cotton in which CCC had an interest. USDA believed that a delivery and shipping standard based on the USWA would have a broader application as the industry receipted about 80 to 90 percent of all cotton under USWA's electronic warehouse receipt authority and the proposed rule reflected that larger applicability.

The proposed rule required an established cotton industry arbitration system to resolve all disputes and compliance without any USDA involvement, user fees or governmental costs. The proposed rule presented a provision that required any party who requested or initiated FSA's involvement in a shipping standard issue would be responsible for any cost incurred by FSA.

Summary of Public Comments Concerning the Proposed Rule

FSA received 31 responses from four sectors of the trade-industry as follows: six cotton trade associations, 22 cotton warehouse operators, two cotton merchants, and one electronic cotton warehouse receipt provider. Some responses contained multiple comments. One respondent favored a standard based on 4.5 percent of inventory on hand; 23 respondents favored a standard based on weekly deliveries of 4.5 percent of a warehouse operator's storage capacity; 18 respondents favored enforcement by the cotton industry with no USDA involvement; six respondents favored no user fees; six respondents favored no increased governmental costs; seven respondents favored dispute resolution using either a cotton industry voluntary arbitration system or the court system; 12 respondents suggested binding arbitration by the cotton industry; 12 respondents suggested that any initiating or requesting parties should be responsible for all costs incurred by the FSA regarding a shipping standard issue; nine respondents suggested changing the phrase ''will be'' at 7 CFR 735.202 (a) to ''may be''; two respondents suggested deletion of 7 CFR 735.202, Compliance and Dispute Resolution; and one respondent suggested that adherence to the standard should be a CCC condition of eligibility and opposed any restrictions on the issuance of electronic warehouse receipts.

After analyzing the comments, FSA has decided to proceed with the issuance of this final rule, with some slight modifications from the proposed rule in response to the comments. Several respondents specifically objected to USDA's mandated arbitration for disputes where the parties had not previously agreed to arbitration and would be required to arbitrate. These respondents argued that their constitutional rights would be infringed upon as they would not be free to choose the forum for resolving their disputes, and their property rights could be affected without due process of the law. The respondents' claims as to contra-constitutionality were overstated; however, USDA did believe that they should change this provision to indicate a permissive use of arbitration where the parties so desired. Accordingly, USDA has amended § 735.202 (a) to change ''will be'' to ''may be'' to indicate that where the parties are able to arbitrate the issue, they should be allowed to do so, but not required by regulation. In addition, the word ''relevant'' will be inserted into § 735.201 to clarify that a warehouseman must meet the delivery standard for the week of the shipment in question.

As with the proposed rule, the final rule will define ''without unnecessary delay,'' through the establishment of a uniform cotton delivery standard based upon weekly deliveries of 4.5 percent of a warehouse operator's licensed storage capacity or CCC approved capacity or other capacity in effect for the relevant week in question. However, enforcement of the standard through arbitration is no longer mandatory. The final rule continues to include a provision that requires any party who requests or initiates FSA's involvement in a shipping standard issue to be responsible for any cost incurred by FSA.

USDA believes this final rule provides an identifiable standard for the delivery and shipment of cotton with the option of arbitrating, has minimal FSA oversight, will best meet the trade-industry's aspirations to expedite the delivery and shipment of U.S. cotton into marketing trade channels and enhance prices paid producers while reducing the cost of handling cotton.

The provisions in this final rule are applicable to cotton warehouse operators licensed under the USWA and any warehouse operators who issue electronic warehouse receipts under the USWA.

List of Subjects in 7 CFR Part 735

Administrative practice and procedure, Cotton, Delivery, Reporting and record keeping requirements, Shipping, Surety bonds, Warehouses.

Accordingly, the provisions of 7 CFR part 735 are amended as follows:

PART 735—COTTON WAREHOUSES

1. The authority citation for 7 CFR part 735 continues to read as follows:

Authority: 7 U.S.C. 241 *et seq.*

2. Section 735.2 is amended by adding paragraph (jj).

§ 735.2 Terms defined.

* * * * *

(jj) *Force majeure.* Severe weather conditions, fire, explosion, flood, earthquake, insurrection, riot, strike, labor dispute, act of civil or military authority, non-availability of transportation facilities, or any other cause beyond the control of the warehouseman that renders performance impossible.

§§ 735.106–735.199 [Reserved]

3. Sections 735.106 through 735.199 are added and reserved.

4. Following § 735.199 an undesignated center heading and §§ 735.200 through 735.202 are added to read as follows:

Delivery and Shipping

§ 735.200 Applicability.

The cotton shipping standard set forth in § 735.201 is applicable to all cotton warehousemen licensed under the Act and to all warehousemen that issue electronic warehouse receipts through an authorized electronic warehouse receipt provider in accordance with part 735 regardless of whether the warehouse is licensed under the Act.

§ 735.201 Cotton shipping standard.

Unless prevented from doing so by force majeure, a warehouseman identified in § 735.200 shall deliver stored cotton without unnecessary delay. A warehouseman shall be considered to have delivered cotton without unnecessary delay, if for the week in question, the warehouseman has delivered or staged for scheduled delivery at least 4.5 percent of either their licensed storage capacity or Commodity Credit Corporation-approved storage capacity or other storage capacity as determined by the Secretary to be in effect during the relevant week of shipment.

§ 735.202 Compliance and dispute resolution.

(a) Any claim for noncompliance with the cotton shipping standard may be resolved by the parties involved through established industry, professional, or mutually agreed upon arbitration procedures. The arbitration procedures shall be nondiscriminatory and provide each person equal access and protection relating to the cotton shipping standard.

(b) No arbitration determination or award resulting from noncompliance with the shipping standard shall affect, obligate, or restrict the Service's authority to provide, administer, and regulate the issuance of a license, receipt, contractual agreement, or authorized electronic warehouse receipt provider system in accordance with the Act.

(c) The Service shall not settle unresolved disputes involving the cotton shipping standard or associated damages.

(d) In the event a party requests assistance from or initiates the involvement of the Service in a matter relating to the cotton shipping standard, the initiating party shall be responsible for all costs incurred by the Service. Before any such assistance is provided, the initiating party shall make payment to the Service in an amount equal to the Service's good faith estimate of costs and expenses that will be incurred in fulfilling the request. Costs incurred that exceed the Service's good faith estimate will be the responsibility of the initiating party.

Signed at Washington, D.C., on October 19, 2000.

Keith Kelly,

Administrator, Farm Service Agency.

[FR Doc. 00–27346 Filed 10–24–00; 8:45 am]

BILLING CODE 3410–05–P

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 1220

[No. LS–00–04]

Soybean Promotion and Research: Amend the Order To Adjust Representation on the United Soybean Board

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Final rule.

SUMMARY: This final rule adjusts the number of members for certain States on the United Soybean Board (Board) to reflect changes in production levels that have occurred since the last time the Board was reapportioned in 1997. These adjustments are required by the Soybean Promotion and Research Order (Order). The results of the adjustments are an additional member for Kansas and one less member for Maryland. As a result of these changes, the total Board membership will remain at 62 members. These changes to the Board are effective with the Secretary's 2001 appointments.

EFFECTIVE DATE: November 24, 2000.

FOR FURTHER INFORMATION CONTACT: Ralph L. Tapp, Chief; Marketing Programs Branch; Livestock and Seed Program; Agricultural Marketing Service (AMS), USDA, Room 2627–S; STOP 0251; 1400 Independence Avenue, SW.; Washington, D.C. 20250–0251; telephone 202/720–1115; fax 202/720–1125; or e-mail to Ralph.Tapp@usda.gov.

SUPPLEMENTARY INFORMATION:

Executive Orders 12866 and 12988, Regulatory Flexibility Act and the Paperwork Reduction Act

The Department of Agriculture (Department) is issuing this rule in conformance with Executive Order 12866.

This rule was reviewed under Executive Order 12988, Civil Justice Reform. It is not intended to have a retroactive effect. This rule would not preempt any State or local laws, regulations, or policies unless they present an irreconcilable conflict with this rule.

The Soybean Promotion, Research, and Consumer Information Act (Act) provides that administrative proceedings must be exhausted before parties may file suit in court. Under § 1971 of the Act, a person subject to the Order may file a petition with the Secretary stating that the Order, any provision of the Order, or any obligation imposed in connection with the Order, is not in accordance with law and requesting a modification of the Order or an exemption from the Order. The petitioner is afforded the opportunity for a hearing on the petition. After a hearing, the Secretary would rule on the petition. The Act provides that the district courts of the United States in any district in which such person is an inhabitant, or has their principal place of business, has jurisdiction to review the Secretary's ruling on the petition, if a complaint for this purpose is filed within 20 days after the date of the entry of the ruling.

Effect on Small Entities

AMS has determined that this final rule will not have a significant economic impact on a substantial number of small entities as defined by the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), because it only adjusts representation on the Board to reflect changes in production levels that have occurred since the Board was reapportioned in 1997. As such, these changes will not impact on persons subject to the program. There are an estimated 600,813 soybean producers who pay assessments and an estimated 10,000 first purchasers who collect assessments, most of whom would be considered small entities under the criteria established by the Small Business Administration (13 CFR 121.201).

Background and Changes

The Act (7 U.S.C. 6301–6311) provides for the establishment of a coordinated program of promotion and research designed to strengthen the soybean industry's position in the marketplace, and to maintain and expand domestic and foreign markets and uses for soybeans and soybean products. The program is financed by an assessment of 0.5 percent of the net market price of soybeans sold by producers. Pursuant to the Act, an Order was made effective July 9, 1991. The Order established a Board of 60 members. For purposes of establishing the Board, the United States was divided into 31 geographic units. Representation on the Board from each unit was determined by the level of production in each unit. The Secretary appointed the initial Board on July 11, 1991. The Board is composed of soybean producers.

Section 1220.201(c) of the Order provides that at the end of each 3-year period, the Board shall review soybean production levels in the geographic units throughout the United States. The Board may recommend to the Secretary modification in the levels of production necessary for Board membership for each unit. At its March 2000 meeting the Board voted to recommend to the Secretary that no modification be made.

Section 1220.201(d) of the Order provides that at the end of each 3-year period, the Secretary must review the volume of production of each unit and adjust the boundaries of any unit and the number of Board members from each such unit as necessary to conform with the criteria set forth in § 1220.201(e): (1) To the extent practicable, States with annual average soybean production of less than 3,000,000 bushels shall be grouped into geographically contiguous units, each of which has a combined production level equal to or greater than 3,000,000 bushels, and each such group shall be entitled to at least one member on the Board; (2) units with at least 3,000,000 bushels, but fewer than 15,000,000 bushels shall be entitled to one Board member; (3) units with 15,000,000 bushels or more but fewer than 70,000,000 bushels shall be entitled to two Board members; (4) units with 70,000,000 bushels or more but fewer than 200,000,000 bushels shall be entitled to three Board members; and (5) units with 200,000,000 bushels or more shall be entitled to four Board members.

A proposed rule was published in the **Federal Register** (65 FR 30922), on May 15, 2000, with a 60-day comment period. One comment was received from the Chairman of the United Soybean Board. The comment states that ''the reapportionment appears to be appropriate under the formula mandated by the Soybean Promotion, Research, and Consumer Information Act.''

Based on the comment received and the requirements of the Act and the Order, AMS is adjusting the representation on the Board as proposed; one additional member for Kansas and one less member for Maryland.

Board membership remains at 62 and is based on average production levels for the years 1995–1999 (excluding crops in years that production was the highest and that production was the lowest) as reported by the National Agricultural Statistics Service. Board member adjustments are effective with the 2001 nominations and appointments.

The number of geographical units remains at 30.

List of Subjects in 7 CFR Part 1220

Administrative practice and procedure, Advertising, Agricultural research, Marketing agreements, Soybeans and soybean products, Reporting and recordkeeping requirements.

For the reasons set forth in the preamble, Title 7, part 1220 is amended as follows:

Part 1220—Soybean Promotion, Research, and Consumer Information

1. The authority citation for 7 CFR part 1220 continues to read as follows:

Authority: 7 U.S.C. 6301–6311.

2. In § 1220.201, the table immediately following paragraph (a) is revised to read as follows:

§ 1220.201 Membership of board.

* * * * *

Unit	Number of members
Illinois	4
Iowa	4
Minnesota	4
Indiana	4
Missouri	3
Ohio	3
Arkansas	3
Nebraska	3
South Dakota	3
Kansas	3

Unit	Number of members
Mississippi	2
Louisiana	2
Tennessee	2
North Carolina	2
Kentucky	2
Michigan	2
North Dakota	2
Wisconsin	2
Maryland	1
Virginia	1
Georgia	1
South Carolina	1
Alabama	1
Delaware	1
Texas	1
Pennsylvania	1
Oklahoma	1
New Jersey	1
Eastern Region (New York, Massachusetts, Connecticut, Florida, Rhode Island, Vermont, New Hampshire, Maine, West Virginia, District of Columbia, and Puerto Rico	1
Western Region (Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Arizona, Wash-ington, Oregon, Nevada, California, Hawaii, and Alaska)	1

* * * * *

Dated: October 19, 2000.

Barry L. Carpenter,

Deputy Administrator, Livestock and Seed Program.

[FR Doc. 00–27411 Filed 10–24–00; 8:45 am]

BILLING CODE 3410–02–P

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 50 and 72

RIN 3150–AF98

Reporting Requirements for Nuclear Power Reactors and Independent Spent Fuel Storage Installations at Power Reactor Sites

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending the event reporting requirements for nuclear power reactors to reduce or eliminate the unnecessary reporting burden associated with events of little or no safety significance. This final rule continues to provide the Commission with reporting of significant events where Commission action may be needed to maintain or improve reactor safety or to respond to heightened public concern. This final rule also better aligns event reporting requirements with the type of information NRC needs to carry out its safety mission, including revising reporting requirements based on importance to risk and extending the required reporting times consistent with the time that information is needed for prompt NRC action. Also, NUREG–1022, Revision 2, ''Event Reporting Guidelines, 10 CFR 50.72 and 50.73,'' is being made available concurrently with the amendments.

DATES: The final rule is effective January 23, 2001.

ADDRESSES: Documents related to this action may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Documents created or received at the NRC after November 1, 1999 are also available electronically at the NRC's Public Electronic Reading Room on the Internet at http://www.nrc.gov/NRC/ADAMS/index.html. From this site, the public can gain entry into the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. For further information contact the PDR Reference staff at 1–800–397–4209, 301–415–4737 or by email to pdr@nrc.gov.

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SUPPLEMENTARY INFORMATION:

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I. Background

The reporting requirements in Sections 50.72 and 50.73 have been in effect, with minor modifications, since 1983. Experience has shown a need for change in several areas. On July 23, 1998 (63 FR 39522), the NRC published in the **Federal Register** an advance notice of proposed rulemaking (ANPR) to announce a contemplated rulemaking that would modify reporting requirements for nuclear power reactors. Among other things, the ANPR requested public comments on several concrete proposals for modification of the event reporting rules. Public meetings were held to discuss the ANPR at NRC Headquarters on August 21, 1998, in Rosemont, Illinois on September 1, 1998, and at NRC Headquarters on November 13, 1998.

A proposed rule was published in the **Federal Register** on July 6, 1999 (64 FR 36291), including a conforming change to Section 72.216. Concurrently, a draft revision to the associated event reporting guidelines was made available for public comment (NUREG–1022, Draft Revision 2). A public meeting was held at NRC Headquarters on August 3, 1999, to discuss the proposed rule and draft guidelines. Public comments were due on September 20, 1999. Additional public meetings were held on February 25, and March 22, 2000, to discuss public comments.

II. Analysis of Comments

The comment period for the proposed rule expired September 20, 1999. Twenty-seven comment letters were received, representing comments from 24 nuclear power plant licensees (utilities), two organizations of utilities, and one State agency.

In addition to the written comments received, the proposed rule was the subject of a public meeting on August 3, 1999, as discussed above under the heading ''Background,'' and comments made at that meeting have also been considered.

Most commenters expressed support for amending the rules in accordance with the objectives discussed in the proposed rule. However, they objected to some of the specific provisions. Many comments also provided specific recommendations for changes to the proposed rules. The resolution of comments is summarized below. This summary addresses the principal comments (*i.e.,* comments other than those that are: minor or editorial in nature; supportive of the approach described in the proposed rules; or applicable to another area or activity outside the scope of sections 50.72 and 50.73).

Comment A (Do not require reporting of degraded components): The proposed rule included a new component reporting criterion. It would have required reporting ''Any event or condition that resulted in a component being in a degraded or non-conforming condition such that the ability of the component to perform its specified safety function is significantly degraded and the condition could reasonably be expected to affect other similar components in the plant.'' The term ''significantly degraded'' was defined by providing several examples of reportable and non-reportable events. The stated purpose was to ensure that design basis or other discrepancies would continue to be reported if the capability to perform a specified safety function is significantly degraded and the condition has generic implications.

Most commenters strongly objected to the proposed component reporting criterion. Among other things, they indicated:

(1) The proposed component reporting criterion is not needed because, after deleting the requirement to report a condition that is outside the design basis of the plant, any significant events would still be captured by the other existing criteria.

(2) The proposed component reporting criterion would be unclear and subject to widely varying interpretation with regard to the meaning of the term ''significantly degraded'' and the term ''could reasonably be expected to apply to other similar components.''

(3) The proposed component reporting criterion would be overly burdensome. For example, it would become necessary to screen all single component failures for reportability.

(4) The proposed component reporting criterion would be contrary to the stated objectives of the rulemaking. For example, it would result in many additional reports for events with little or no safety- or risk-significance.

Response: In the final rule, the proposed reporting criterion has been retained, but modified to address the concerns about unnecessary burden and clarity expressed in the comments. It requires reporting any event or condition that as a result of a single cause could have prevented the fulfillment of a safety function for two or more trains or channels in different systems that are needed to:

(1) Shut down the reactor and maintain it in a safe shutdown condition;

(2) Remove residual heat;

(3) Control the release of radioactive material; or (4) Mitigate the consequences of an accident.

Events covered by this criterion may include cases of procedural error, equipment failure, and/or discovery of a design, analysis, fabrication, construction, and/or procedural inadequacy. However, licensees are not required to report an event pursuant to this criterion if the event results from:

(1) A shared dependency among trains or channels that is a natural or expected consequence of the approved plant design; or

(2) Normal and expected wear or degradation.

Subject to the two exclusions stated above, this criterion, as modified, is needed to capture those events with enough generic significance that a single cause could have prevented the fulfillment of the safety function of multiple trains or channels, but the event:

(1) Would not be captured by §§ 50.73(a)(2)(v) and 50.72(b)(3)(v) [event or condition that could have prevented fulfillment of the safety function of structures and systems needed to * * *] because the affected trains or channels are in different systems; and

(2) Would not be captured by § 50.73(a)(2)(vii) [common cause inoperability of independent trains or channels] because the affected trains or channels are either:

(i) Not assumed to be independent in the plant's safety analysis; or

(ii) Not both considered to be inoperable.

The criterion, as modified, would not be unclear because it uses the term ''could have prevented fulfillment of the safety function,'' which is already used in a previously existing criterion.

The criterion, as modified, is not considered overly burdensome because it is estimated to result in fewer reports than the previous requirement to report a condition outside the design basis of the plant. It is not necessary to screen all single component failures for reportability.

The criterion, as modified, is considered consistent with the objectives of the rulemaking for the same reasons.

*Comment B (Do not change the term ''any engineered safety feature [ESF] * * *''):* In the proposed rule, the term ''any engineered safety feature (ESF), including the reactor protection system (RPS),'' which defines the systems for which actuation must be reported, would be replaced by a specific list of systems. It was recognized that this proposal to list the systems in the rule was controversial and public comment was specifically invited in this area. In particular, three principal alternatives to the proposed rule were identified for comment. They are:

Alternative 1, status quo. The rule would continue to require reporting for actuation of ''any ESF.'' The guidance would continue to infer that reporting should include the systems on a list which is similar to the list in the proposed rule.

Alternative 2, plant-specific list. The rule would require that licensees develop a plant-specific, risk-informed list.

Alternative 3, pre-1998 practice. The rule would continue to require reporting actuation of ''any ESF.'' The guidance would indicate that this includes those systems identified as ESF's in each plant's final safety analysis report (FSAR).

The comments may be summarized as follows:

(1) Most commenters objected to the proposed rule, which would replace the term ''any engineered safety feature (ESF), including the reactor protection system (RPS)'' with a list of specific systems. The reasons cited by the commenters include the following:

(a) Providing an all-inclusive list of systems in the rules is inappropriate.

(b) Each facility's FSAR specifies equipment that is designated as ESF equipment.

(c) Plant-specific differences exist in the safety-related status of their systems.

(d) The risk-significance of a particular system can vary greatly between plants, due to a wide variety of design differences. An all-inclusive list would increase the burden for some plants whose equipment on the list was not ESF equipment or equipment with a suitably high risk-significance.

(e) There are a number of specific problems with the proposed list. Specific examples were provided.

(2) Most commenters recommended in favor of Alternative 3, returning to the pre-1998 practice of reporting actuation for only those systems that are designated as ESFs in each facility's FSAR. They stated that this option best meets the goal of clarity and simplicity.

(3) One commenter recommended in favor of Alternative 1 (status quo), where the reporting guidelines contain a list of systems similar to the list proposed for the rule. It stated that the facility's internal reporting procedures already reflect the current practice. Any benefit that might be obtained by returning to the pre-1998 practice would be so slight that it would not justify the cost of changing the procedures.

(4) Some commenters indicated that there are problems with the status quo that need to be solved. For example, the reporting guidelines should exclude

reporting of reactor water cleanup system (RWCU) isolations that routinely occur during system restoration following maintenance outages, due to rapid pressurization following valve opening.

(5) Most commenters objected to Alternative 2 (developing a plant-specific, risk-informed list of systems). They stated that this would require a significant expenditure of resources and it is unclear as to whether or how it would meet the NRC's needs better than Alternative 3 (returning to pre-1998 practice). They also noted that there is a separate initiative to ''risk-inform'' 10 CFR Part 50. This may result in development of plant-specific lists of systems based on risk significance. However, the commenters do not believe the necessary criteria have been adequately established to make that shift as part of this rulemaking to modify 10 CFR 50.72 and 50.73. They recommended that later, as part of the rule change to ''risk-inform'' Part 50, the NRC should evaluate whether or not it is appropriate to ''risk-inform'' ESF systems subject to the event reporting requirements of 10 CFR 50.72 and 50.73.

Response: (1) The NRC believes providing a list of systems is the best approach because it will obtain consistent reporting of events that result in actuation of highly risk-significant systems. Consistent reporting for such events is needed to support estimating equipment reliability parameters and is important to several aspects of the NRC's general move towards more risk-informed regulation.

Commenters stated that the risk-significance of the systems varies depending on plant design. As discussed below under the headings ''(e)(i)'' through ''(e)(vii),'' a number of items have been removed from the list based on specific comments. The NRC believes that these systems remaining on the list are of sufficient risk significance to warrant reporting of a system actuation. The principal reason for reporting an actuation of one of these systems is that it is indicative of an unplanned plant transient that the NRC needs to evaluate to determine if action is necessary to address a safety problem. In this context, the NRC's need to evaluate the event is independent of classification of the system. For example, a valid actuation of the auxiliary feedwater (AFW) system at a pressurized water reactor (PWR) means there was a transient that involved an abnormal plant parameter, such as low steam generator level, which initiated the actuation. This is the reason the NRC needs to evaluate the event, and it is independent of how the AFW system happens to be classified at the particular plant.

The classification of systems in the FSARs has evolved over the years. For example, in earlier PWR designs the auxiliary feedwater system was not considered to be an ESF, and this is reflected in early FSARs. Later, although the system's function and importance did not change, it came to be considered an ESF, and this is reflected in later FSARs. Since the function and importance is the same regardless of classification, it does not make sense to exclude reporting for actuation of the auxiliary feedwater system based on its classification in the FSAR.

Furthermore, this approach is estimated to result in a net reduction in the number of events reported under this criterion. Some licensees will make additional reports involving highly risk-significant systems. However, these additional reports will be outweighed by the elimination of reports involving systems with lesser risk-significance.

(a) Commenters indicated that providing an all-inclusive list of systems in the rules is inappropriate. However, the NRC does not believe the list is all inclusive. It contains only systems that are highly risk-significant and omits systems of lesser risk-significance, even if the systems of lesser risk-significance are designated as ESFs. The NRC also believes the list is appropriate because it provides consistent reporting of events that result in actuation of these highly risk-significant systems and, at the same time, a net reduction in reporting burden.

(b) Commenters stated that each facility's FSAR specifies equipment that is designated as ESF equipment. However, the NRC believes that those lists are not consistent or risk-informed. For example, at several plants, emergency diesel generators (EDGs), which are highly risk-significant, are not identified as ESFs. At several pressurized water reactors (PWRs), the AFW system which is highly risk-significant, is not identified as an ESF. At most boiling water reactors (BWRs), the reactor core isolation cooling (RCIC) system, which is highly risk-significant, is not identified as an ESF. On the other hand, most plants identify systems with lesser risk-significance, such as fuel building ventilation and filtration systems, as ESFs.

(c) Commenters stated that plant-specific differences exist in the safety-related status of systems. However, the NRC does not believe that this fact bears directly on the question of which system actuations should be reported. There is no need to report the actuation of all safety related systems, and there is no reason to exclude reporting for the actuation of a non-safety-related system if it is highly risk-significant simply on the basis that it has not been classified by the licensee as an ESF.

(d) Commenters stated that the risk-significance of a particular system can vary greatly among plants. They further stated that an all-inclusive list would therefore increase the burden for some plants whose equipment on the list was not ESF equipment or equipment with a suitably high risk-significance. The NRC agrees with the general statement that the risk-significance of a particular system can vary greatly among plants. However, the systems on the list are virtually always of high risk-significance. While it is true that, as a result of the list, some licensees will make additional reports, any additional reports will involve systems that are highly risk-significant. Also, these additional reports will be outweighed by the elimination of reports involving systems with lesser risk-significance. Thus, the net effect is a reduction in reporting.

(e) Commenters provided several specific examples of items they considered to be problems with the list. These examples are:

(i) In the proposed rule, the feedwater coolant injection (FWCI) system was characterized as an example of an emergency core cooling system (ECCS). Commenters stated that FWCI systems are not considered to be ECCS. The NRC believes that clarification is warranted. In the final rule, FWCI is not characterized as an ECCS. However, it is included as a separate item in the list.

(ii) The proposed rule would have required reporting actuations of the RCIC system. Commenters stated that RCIC is included in the Improved Standard Technical Specifications (ISTS) because it meets criterion 4 of 10 CFR 50.36, based on its contribution to the reduction of overall plant risk. They further stated that RCIC is not credited in the plant's safety analysis. The NRC believes that RCIC is highly risk-significant and, therefore, it remains on the list in the final rule.

(iii) Commenters stated that non-reportable exceptions should be allowed for systems that are considered to be ESFs, yet have lower levels of risk significance (control room ventilation systems, reactor building ventilation systems, fuel building ventilation systems, auxiliary building ventilation systems, RWCU isolations during restoration from maintenance, etc.). The NRC agrees. The final rule eliminates unnecessary reporting for systems that are considered to be ESFs, yet have lower levels of risk significance. It also eliminates reporting for RWCU isolations during restoration from maintenance because they are routine and are of low risk and safety significance.

(iv) Commenters stated that the list inappropriately includes ''associated support systems'' for BWR Division 3 EDGs. The NRC agrees. In the final rule the term ''associated support systems'' has been eliminated for BWR Division 3 EDGs, and other EDGs as well.

(v) Commenters stated that the list inappropriately includes station blackout diesel generators (and black start gas turbines that serve a similar purpose) that are not safety related. The NRC agrees. The final rule does not require reporting for station blackout diesel generators (and black start gas turbines that serve a similar purpose).

(vi) Commenters stated that although the term ''anticipated transient without scram (ATWS) mitigating systems'' is clear to those licensees that have dedicated systems (*i.e.* AMSAC), a great deal of confusion exists for those that have no dedicated system. Due to the lack of clarity, it could be interpreted that any system that might be used during an ATWS would fall into this category (*i.e.* feedwater systems, borating systems, control rods, etc.). Extensive clarification would be needed to eliminate this ambiguity. The NRC agrees that clarification is warranted. In the final rule this item has been eliminated. Reporting is not needed for actuations for a system such as AMSAC. The reports needed for other systems are captured by other items on the list.

(vii) Commenters stated that it is unclear as to whether the service water entry applies only to emergency service water systems (*i.e.,* those that don't operate unless there is an accident) or also to the standby service water systems that only run to remove heat from the residual heat removal (RHR) heat exchangers. The NRC agrees. In the final rule this item has been clarified to indicate that reporting is required for emergency service water (ESW) systems that do not normally run and that serve as ultimate heat sinks. In addition, this item has been deleted from the list of systems for which telephone notification is required under section 50.72 because an ESW actuation by itself does not indicate the type of transient that the NRC needs to evaluate. However, ESW system actuations are reportable only under section 50.73 because the information is needed to support the NRC staff's equipment reliability estimates.

(2) As stated by commenters, Alternative 3 would provide clarity and simplicity. However, the NRC believes that adoption of the list of systems in the final rule also provides clarity and simplicity.

(3) Although one commenter recommended in favor of Alternative 1, the NRC believes that this alternative would invite variable interpretation. The event reporting guidelines would contain a list of systems, whereas the rule would require reporting the actuation of ''any ESF.''

(4) Some commenters stated that, under previous requirements it was necessary to report reactor water cleanup system isolations that routinely occur during system restoration following maintenance outages, due to rapid pressurization following valve opening. The list of systems eliminates these unneeded reports because it limits the reporting of containment isolation signals to those that affect multiple systems or multiple main steam isolation valves (MSIVs).

(5) As indicated in the comments, with respect to Alternative (2), the project to ''risk-inform'' 10 CFR Part 50 may, in the future, lead to development of plant-specific lists of systems based on importance to risk and, as part of that project, it may be appropriate to consider whether or not the applicability of this reporting criterion, as well as other reporting criteria, should be based on such lists. It is expected that at that time the criteria necessary for development of the list will have been adequately established.

Comment C (Eliminate reporting for historical events): The proposed rule would have eliminated the requirement for a telephone notification, under 10 CFR 50.72, for:

(1) ''Any event, found while the reactor is shutdown, that, had it been found while the reactor was in operation, would have resulted in the nuclear power plant, including its principal safety barriers, being seriously degraded or being in an unanalyzed condition that significantly compromises plant safety,'' and

(2) ''Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: (A) Shut down the reactor and maintain it in a safe shutdown conditions; (B) remove residual heat; (C) Control the release of radioactive material; or (D) Mitigate the consequences of an accident'' if the condition no longer exists at the time of discovery.

The proposed rule would also have eliminated the requirement for a written licensee event report (LER), under 10 CFR 50.73, for:

(1) ''Any operation or condition prohibited by the plant's Technical Specifications,'' if the condition has not existed within three years of the date of discovery, and

(2) ''Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: (A) Shut down the reactor * * *; (B) remove residual heat; (C) Control the release of radioactive material; or (D) Mitigate the consequences of an accident,'' if the condition has not existed within three years of the date of discovery.

With regard to 10 CFR 50.73, public comment was specifically invited on whether such historical events and conditions should be reported (rather than being excluded from reporting, as proposed). Public comment was also invited on whether the three year exclusion of such historical events and conditions should be extended to all written reports required by section 50.73(a) (rather than being limited to these two specific reporting criteria, as proposed).

Most commenters supported the revisions to 10 CFR 50.72 that eliminate reporting of historical events. They stated that no safety significance exists for 10 CFR 50.72 reporting of historical events.

Most commenters also supported: (1) the elimination of written LERs for historical events for the two cases proposed; (2) extending the exclusion to all written reports required under section 50.73(a); and (3) using two years as a cutoff point, rather than three years. They stated that two years encompasses one refueling cycle of operation. Significant effort can be expended searching back in history for historical events. Reporting historical events more than two years old provides a low safety benefit and unnecessarily increases the reporting burden. It was recognized that three years is consistent with the time period that performance indicators are tracked under the new oversight process. However, most commenters stated that no safety significance exists for 10 CFR 50.73 reporting of historical events which occurred more than two years ago.

Response: The final rule eliminates the requirement to provide a telephone notification or a written LER for a historical event for the reasons discussed above.

The cutoff date for reporting of historical events remains at 3 years, as was indicated in the proposed rule. The 3-year cutoff is necessary because the NRC staff tracks performance indicators for a period of 3 years, in order to include a refueling outage as well as an extended period of operations, which provides more stable performance indicators. The additional burden of searching back for 3 years to determine if a condition existed within three years of the date of discovery, instead of only 2 years, is minimal because this type of event is rarely identified. Thus, it is considered justified in order to provide better performance indicators.

Comment D (Time limits for reporting): The proposed rule would have continued to require reporting within one hour after occurrence for declaration of an Emergency Class, or for deviation from the plant's Technical Specifications authorized pursuant to 10 CFR 50.54(x). Reporting of other events that are reportable by telephone under 10 CFR 50.72 would be reportable within 8 hours after occurrence, rather than within 1 hour or 4 hours as was previously required. Submittal of written LERs would be required within 60 days after discovery, rather than within 30 days as previously required.

Public comment was specifically invited on the question of whether additional levels should be used to better correspond to particular types of events. For example, 10 CFR 50.72 previously required reporting within 4 hours for events that involve low levels of radioactive releases, and events related to safety or environmental protection that involve a press release or notification of another government agency. These types of events could be maintained at 4 hours so that information is available on a more timely basis to respond to heightened public concern about such events. In another example, events related to environmental protection are sometimes reportable to another agency, which is the lead agency for the matter, with a different time limit, such as 12 hours. These types of events could be reported to the NRC at approximately the same time as they are reported to the other agency.

Most comments on the proposed rule supported the proposal to use just three basic levels of required reporting times in 10 CFR 50.72 and 10 CFR 50.73 (1 hour, 8 hours, and 60 days), as indicated in the proposed rule, in the interest of simplicity. They indicated that additional levels of reporting are not needed. They also agreed with the revised reporting times based on importance to risk and extending the required reporting times consistent with the need for prompt NRC action. Additionally, they noted that the increased time for submittal of LERs will allow for completion of required engineering evaluations after event discovery, provide for more complete and accurate LERs, and result in fewer LER revisions and supplemental reports.

One comment letter, from the State of North Carolina, recommended maintaining the required reporting time at 4 hours for:

(1) Any airborne radioactive release that, when averaged over a time period of 1 hour, results in concentrations in an unrestricted area that exceed 20 times the applicable concentration specified in Appendix B to Part 20, Table 2, Column 1;

(2) Any liquid effluent release that, when averaged over a time of 1 hour, exceeds 20 times the applicable concentration specified in Appendix B to Part 20, Table 2, Column 2, at the point of entry into the receiving waters (*i.e.,* unrestricted area) for all radionuclides except tritium and dissolved noble gases;

(3) Any event requiring the transport of a radioactively contaminated person to an offsite medical facility for treatment; and

(4) Any event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made. Such an event may include an onsite fatality or inadvertent release of radioactively contaminated materials.

The letter indicated that the information from such events are of interest to the public and public officials. Furthermore, the State's Division of Radiation Protection (DRP) provides independent advice to State decision-makers as part of its emergency preparedness function. Any delay in providing the information to the DRP may prevent or delay decisions on public health or public announcements. State agencies may be able to get the information from licensees, even under the proposed rule. However, this can be difficult to do when an incident is actually occurring unless the NRC's rules mandate the reporting within a prompt and well-defined period of time.

Similar comments were received from the State of Illinois regarding the ANPR.

Response: After consideration of the comments, and the potential need for NRC action, the final rule employs four basic levels of required reporting times in 10 CFR 50.72 and 10 CFR 50.73 (1 hour, 4 hours, 8 hours, and 60 days). Although this is not as simple as using just three levels, as was indicated in the proposed rule, it allows more flexibility in matching the required reporting time to the potential need for NRC action.

The final rule requires 4-hour reporting, if the event was not reported in 1 hour, for an event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made. Such an event may include an onsite fatality or inadvertent release of radioactively contaminated materials. This is the same as previously required. These reports are needed promptly because they involve events where there may be a need for the NRC to respond to heightened public concern.

The final rule also requires 4-hour reporting, if the event was not reported in 1 hour, for unplanned transients. These are events where there may be a need for the NRC to take a reasonably prompt action, such as partially activating its response plan to monitor the course of the event. In summary, they are:

(a) An event that resulted or should have resulted in ECCS discharge into the reactor coolant system (RCS) as a result of a valid signal, except when it results from and is part of a pre-planned sequence during testing or operation. Previously this was a 1-hour report.

(b) Initiation of a shutdown required by the plant's Technical Specifications. Previously this was a 1-hour report.

(c) A reactor scram or reactor trip when the reactor is critical, except when it results from and is part of a pre-planned sequence during testing or operation. Previously, actuation of any engineered safety feature (ESF), including the reactor protection system (RPS), was a 4-hour report.

Three criteria are deleted from § 50.72 because they are not needed in order to obtain prompt notification of events. They are retained in § 50.73, however, because they are needed in order to obtain written LERs. In summary, they are:

(a) A natural phenomenon or other external event that poses an actual threat to plant safety, or significantly hampers site personnel in the performance of duties necessary for safe operation. Events of this type are captured by declaration of an Emergency Class, which is reportable within 1 hour.

(b) An internal event that poses an actual threat to plant safety, or significantly hampers site personnel in the performance of duties necessary for safe operation, including fires, toxic gas releases, or radioactive releases. Events of this type are captured by declaration of an Emergency Class, which is reportable within 1 hour.

(c) An airborne radioactive release, or liquid effluent release, that exceeds specific limits. Releases that are large enough to warrant prompt notification are captured by declaration of an

Emergency Class, which is reportable within 1 hour after the declaration. Releases that involve a public announcement or notification to another agency are reportable within 1 hour after the announcement or notification.

For the remaining events reportable under § 50.72, the final rule requires 8-hour reporting, if not reported in 1 hour or 4 hours. These are events where there may be a need for the NRC to take an action within about a day, such as initiating a special inspection or investigation. In summary, they are:

(a) The plant including its principal safety barriers being in a seriously degraded condition, or the plant being in an unanalyzed condition that significantly degrades plant safety.

(b) A valid actuation of any system listed in paragraph (b)(3)(iv)(B), except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation.

(c) An event or condition that at the time of discovery could have prevented fulfillment of the safety function of structures or systems needed to shut down the reactor, remove residual heat, control the release of radioactive material, or mitigate an accident.

(d) Transport of a radioactively contaminated person to an offsite medical facility.

(e) A major loss of emergency assessment capability, offsite response capability, or offsite communications capability.

Comment E (Eliminate all reporting of invalid ESF actuations): The proposed rule would have eliminated the requirement for a telephone notification, under 10 CFR 50.72, for an ESF actuation if it is an invalid automatic actuation or an unintentional manual actuation. It was stated that invalid actuations are generally less significant than valid actuations because they do not involve plant conditions (*e.g.*, low reactor coolant system pressure) that would warrant system actuation. Instead, they result from other causes (such as a dropped electrical lead during testing).

The proposed rule would not have eliminated the requirement for a written LER for such events. It was stated that there is still a need for reporting, because the reports are used in making estimates of equipment reliability parameters, which in turn are needed to support the Commission's move towards risk-informed regulation.

Most commenters indicated that invalid ESF actuations should not be reported under 10 CFR 50.73 unless the actuation impacts the plant such that other reporting criteria are independently met. They stated that contrary to the NRC's expectations, reporting of invalid actuations will not provide the information needed to estimate equipment reliability parameters. This information should be collected by other less burdensome mechanisms, such as the Equipment Performance and Information Exchange (EPIX) system and Maintenance Rule reports.

Response: The NRC disagrees with many of the comments. Invalid actuations do provide information needed in estimating equipment reliability because they constitute unplanned demands. The response to unplanned demands may or may not differ significantly from those of planned test demands. Thus, in making reliability estimates, the results from unplanned demands are compared against those from planned test demands to determine whether or not it is appropriate to combine them. As indicated in the Commission Paper SECY–97–101, May 7, 1997, ''Proposed Rule, 10 CFR 50.76, Reporting Reliability and Availability Information for Risk-significant Systems and Equipment,'' Attachment 3, this is one of the categories of information that the NRC relies upon in order to make equipment reliability estimates.

As also discussed in SECY–97–101, EPIX is a voluntary program which does not provide a break out of invalid actuations and their results. The fact that ESF actuations are reported in written LERs was one of the key factors in making the determination that the NRC could work around weaknesses in the EPIX data in order to develop reliability estimates.

Reports developed under the maintenance rule, 10 CFR 50.65, are not submitted to the NRC.

Regardless, the Commission agrees that a reduction in unnecessary burden is warranted. Accordingly, the final rule takes the following approach:

(a) The requirement to provide a telephone notification under § 50.72 for an invalid ESF actuation is eliminated, as was indicated in the proposed rule.

(b) The requirement to report these events under § 50.73 is retained. However, the licensee is given the option of providing a telephone report rather than a written LER. This is far less burdensome. In this case, the telephone notification has the same due date as the LER would have (60 days) because the information is not needed immediately.

Comment F (Eliminate reporting of high pressure coolant injection (HPCI) inoperability): As indicated in the 1983 Statements of Considerations for 10 CFR 50.72 and 50.73, failure or inoperability of a single train system, such as the HPCI system in BWRs, is considered to constitute an ''event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: (A) Shut down the reactor * * *; (B) Remove residual heat; (C) Control the release of radioactive material; or (D) Mitigate the consequences of an accident.''

Most commenters indicated that inoperability of HPCI does not of itself constitute a condition that would prevent the fulfillment of a safety function. Therefore, there is no benefit in reporting of HPCI inoperability if it has no affect on the ability to fulfill a safety function. BWR design considers HPCI inoperability and provides supporting systems such as reactor core isolation cooling (RCIC), Core Spray, and automatic depressurization system (ADS). This is supported by the relatively long Allowed Outage Time for HPCI in the Standard Technical Specifications (*i.e.*, 14 days). If, in the event of HPCI inoperability, it can be shown that these systems are available and capable of fulfilling the safety function without HPCI, the event should not be reportable. Reporting HPCI inoperability in these cases has no meaning for event reporting and appears to be solely a data gathering exercise.

Additionally, the reactor oversight process uses a performance indicator for Safety System Functional Failures based on 10 CFR 50.73 reports. These indicators count failures of single train systems (such as HPCI), assuming that the event report documents a safety system failure. Reporting HPCI inoperability when there is no impact on the overall capability to fulfill the safety function (*e.g.*, remove residual heat) will result in an overly conservative and detrimental assessment of this indicator.

Response: As indicated in the 1983 Statements of Considerations for 10 CFR 50.72 and 50.73, the purpose of this reporting criterion is to capture failure, inoperability, etc. on the basis of a structure or system. Thus, if an event or condition could have prevented fulfillment of the safety function of a system (*i.e.*, by that system), it is reportable even if other system(s) could have performed the same safety function(s).

Also, in its assessment of plant performance, the NRC uses a performance indicator that includes failure or inoperability of single train systems such as HPCI. Thus, elimination of the requirement to report such events would be contrary to one of the objectives of the rulemaking—to maintain consistency with the NRC's actions to improve integrated plant performance.

Comment G (Allow 8 hours after discovery for telephone reporting): Section 50.72(b)(3) states ''* * * the licensee shall notify the NRC as soon as practical and in all cases, within eight hours of the occurrence of any of the following: * * *'' The comment letter states that this should be revised to say ''* * * the licensee shall notify the NRC as soon as practical and in all cases, within eight hours of the occurrence or discovery of any of the following: * * *.'' The addition of the term ''or discovery'' provides for those events that are discovered to have occurred in the past, remained undetected for sometime, and presently exist.

Response: The NRC disagrees. Addition of the term ''or discovery,'' as suggested by the comment, is not necessary. As they have in the past, the reporting guidelines address those limited cases, such as discovery of an existing but previously unrecognized condition, where it may be necessary to undertake an evaluation in order to determine if an event or condition is reportable. In other cases, where telephone reporting is required, the event should be reported as soon as practical and not later than the specified time limit.

Comment H (Eliminate telephone reporting for non-critical scrams): Most commenters recommended that telephone reporting of RPS actuation (reactor scrams) be limited to those occurring from a critical condition.

Response: The NRC partially disagrees. A valid scram, even from a subcritical condition, is indicative of an event with enough significance that the NRC should screen and/or review it on the day it occurs, rather than waiting for submittal of a written LER. However, telephone reporting under section 50.72 has been eliminated for invalid scrams from a subcritical condition.

Comment I (Limit reporting to conditions that do prevent fulfillment of a required function): Regarding section 50.72(b)(2)(v), which indicates that licensees shall report: ''Any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to: * * *,'' this should be revised to read as follows: ''Any event or condition that at the time of discovery is preventing the ability to fulfill the safety function of structures or systems that are needed to: * * *''

This change is required to reflect the correct tense of the existence of an event or condition, rather than past speculation. Because of past confusion pertaining to the interpretation of this area, it is suggested that further discussion be included in the statements of consideration explaining that ''is preventing'' represents actual conditions and does not imply that further failures should be speculated.

Response: The NRC does not agree. The term ''could have prevented'' reflects the meaning of the rule. It means that, at the time of discovery, the condition could have prevented fulfillment of the function (for example, had there been a demand for the function). This includes but is not limited to the case where, at the time of discovery, the condition is actually preventing fulfillment of the function.

This Statement of Considerations and the reporting guidelines indicate that, in evaluating reportability under this criterion, it is not necessary to postulate an additional random single failure.

Comment J (Human performance data in LERs): Section 50.73(b)(2)(ix)(J) previously required that the narrative section of an LER include the following specific information as appropriate for the particular event:

''(1) Operator actions that affected the course of the event, including operator errors, procedural deficiencies, or both, that contributed to the event.

(2) For each personnel error, the licensee shall discuss:

(i) Whether the error was a cognitive error (e.g., failure to recognize the actual plant condition, failure to realize which systems should be functioning, failure to recognize the true nature of the event) or a procedural error;

(ii) Whether the error was contrary to an approved procedure, was a direct result of an error in an approved procedure, or was associated with an activity or task that was not covered by an approved procedure;

(iii) Any unusual characteristics of the work location (e.g., heat, noise) that directly contributed to the error; and

(iv) The type of personnel involved (*i.e.*, contractor personnel, utility-licensed operator, utility non-licensed operator, other utility personnel).''

The proposed amendment would have changed section 50.73(b)(2)(ii)(J) to simply state: ''For each human performance related problem that contributed to the event, the licensee shall discuss the cause(s) and circumstances.'' It was stated that the current rule is more detailed than necessary. Details would continue to be provided in the reporting guidelines, as indicated in section 5.2.1 of the draft of Revision 2 to NUREG–1022.

Most commenters recommended that, instead of adopting the wording in the proposed rule, section 50.73(b)(2)(ii)(J) be revised to state: ''For each root cause personnel error, the licensee shall discuss the cause(s) and circumstances.'' They stated that the shift from ''personnel error'' and the implied ''root cause'' to ''human performance related problem'' and ''contributing factors'' would greatly increase the scope of investigation and burden to the licensee. They also stated that it is only appropriate to require discussion of personnel error root causes.

Response: The intent of the proposed change was to clarify the requirements, not to expand them. Accordingly, the final rule states ''For each human performance related root cause, the licensee shall discuss the cause(s) and circumstances.'' This limits the requirement to discussion of root causes of the event. It would not be appropriate, or consistent with the previous requirement discussed above, to limit the requirement to discussion of personnel error root causes, as opposed to procedural deficiency root causes, for example.

Comment K (Do not require additional availability data in LERs): Section 50.73(b)(3) requires that the assessment of safety consequences in an LER include the availability of systems or components that could have performed the same functions as systems or components that failed during the event. Proposed section 50.73(b)(3)(ii) would add a requirement that the assessment also include the availability of systems or components that: ''Are included in emergency or operating procedures and could have been used to recover from the event in case of an additional failure in the systems actually used for recovery.''

Most commenters objected to this new provision, on the grounds that it adds significant burden without adding value. They stated that reporting should be based on existing plant conditions. Emergency operating procedures provide direction for use of many plant systems. If additional failures must be postulated, multiple systems would be required to be included in the LER for each safety function. There exists an infinite combination of failures that could be postulated. This unbounded requirement would result in a large amount of additional information that would be of minimal use. The assessment of the safety consequences and implications of the event would become cluttered with hypothetical additional failures and possible plant responses. Some commenters stated that the proposed requirement would require licensees to speculate on actions that could have been taken, and it would add significant burden with no added value.

Response: The purpose of the proposed change was to ensure that LERs contain sufficient information to support a risk assessment of the event. Usually there is enough information, or there is nearly enough information and the NRC staff can telephone the licensee to obtain any additional information needed. Section 50.73(b)(2)(6) requires that LERs include ''The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional information concerning the event and the plant's characteristics.'' Further, Section 50.73(c) provides that the NRC may require submittal of additional information if necessary for complete understanding of an unusually complex or significant event.

However, for those events that occur when the plant is shutdown, it has been difficult to obtain enough information because it cannot be assumed that equipment that is normally operable and available during operation is available during plant shutdown. Accordingly, in the final rule there is a requirement for additional availability information. To eliminate unnecessary burden, the requirement for additional availability data is limited to shutdown events. Also, it is revised to simply require providing the availability of systems needed to shut down the reactor and maintain safe shutdown conditions, remove residual heat, control the release of radioactive material, or mitigate an accident. This will eliminate potential difficulties in deciding what combinations of failures should be postulated for the purpose of deciding which systems to address.

Comment L (The rule should stand alone): Licensees must use both the rule and NUREG–1022, Rev. 2, to determine reportability of conditions. The rule should be a stand-alone document written simply enough to be understood without the need for a 100+ page guidance document.

Response: The NRC does not agree that it is necessary to eliminate the detailed event reporting guidelines and/or include a similar level of detail in the rule. Generally speaking, the rule language cannot be precise enough to cover all the situations that might be governed by the rule and require clarification. Furthermore, in response to the ANPR, most commenters expressed the need for timely guidance on the final rule. Finally, the NRC has reviewed the guidelines and modified them where necessary to ensure they are consistent with the final rule.

Comment M (The terms ''significant'' and ''serious'' are not defined in the rule): One commenter stated that the terms ''significantly affects'' and ''seriously degraded'' are not defined anywhere in the proposed rule.

Response: The NRC does not agree that it is necessary to define these terms in the rule. The term ''unanalyzed condition that significantly affects plant safety,'' which was used in the proposed rule, is changed to ''unanalyzed condition that significantly degrades plant safety'' in the final rule, to make it clear that only matters with a negative effect on safety are reportable. Its meaning is defined by the same examples that have served since 1983 to define the term ''unanalyzed condition that significantly compromises plant safety.'' These are: (1) Multiple functionally related safety grade components out of service; (2) accumulation of voids that could inhibit the ability to adequately remove heat from the reactor core, particularly under natural circulation conditions; and (3) voiding in instrument lines that results in erroneous indication causing the operator to misunderstand the true condition of the plant. Also, two new examples have been added. They are: (1) Discovery that a system required to meet the single failure criterion does not do so; and (2) discovery that the fire protection system does not protect at least one safe shutdown train in the event of fire in a given area. All of these examples are discussed in the Statement of Considerations for the final rule as well as the reporting guidelines.

The term ''condition of the nuclear power plant, including its principal safety barriers, being seriously degraded'' is defined by guidance that is very similar to the guidance which has defined it since 1983. Specifically, the guidance states that this criterion applies to material (*e.g.*, metallurgical or chemical) problems that cause abnormal degradation of or stress upon the principal safety barriers (*i.e.*, the fuel cladding, reactor coolant system pressure boundary, or the containment) such as:

(1) Fuel cladding failures in the reactor, or in the storage pool, that exceed expected values, or that are unique or widespread, or that are caused by unexpected factors.

(2) Welding or material defects in the primary coolant system which cannot be found acceptable under ASME Section XI, IWB–3600, ''Analytical Evaluation of Flaws'' or ASME Section XI, Table IWB–3410–1, ''Acceptance Standards.''

(3) Serious steam generator tube degradation.

(4) Low temperature over pressure transients where the pressure-temperature relationship violates pressure-temperature limits derived from Appendix G to 10 CFR Part 50 (*e.g.*, TS pressure-temperature curves).

(5) Loss of containment function or integrity, including containment leak rate tests where the total containment as-found, minimum-pathway leak rate exceeds the limiting condition for operation (LCO) in the facility's TS.

This guidance is discussed in further detail below under the heading ''Principal safety barrier seriously degraded.''

Comment N (False elevated sense of problems): In addition to the points discussed above under the heading ''Comment E,'' some commenters stated that reporting of invalid actuations will convey a false elevated sense of problems to the general public, causing undue alarm for situations that actually represent little or no safety or risk significance. Therefore, the new rule should not require invalid actuations to be reported.

Response: The NRC does not agree that it is necessary to eliminate reporting for invalid actuations in order to avoid conveying a false elevated sense of problems to the general public. As discussed in the response to Comment E, there is a need for reporting of these events because they are used in making estimates of equipment reliability parameters, which in turn are needed to support the NRC's move towards risk-informed regulation. Invalid actuations have been reportable since 1983 under the previous rules, pursuant to both sections 50.72 and 50.73. No undue public alarm about such invalid actuations has been apparent to the NRC. The commenters did not identify any specific situation or provide any anecdotal evidence that reporting such invalid actuations has caused undue public alarm.

Comment O (Eliminate reporting of missing fire barriers): One commenter stated that the proposed rule notice at Page 36299, first column, the example pertaining to missing or degraded fire barriers basically equates such conditions with degraded principal safety barriers (*i.e.*, fuel cladding, reactor coolant pressure boundary, and containment). This is inappropriate and should be deleted.

Response: The NRC does not agree. The example indicates that a condition is reportable, as an unanalyzed condition that significantly affects plant safety, ''if fire barriers are found to be missing such that the required degree of separation for redundant safe shutdown trains is lacking.'' This would mean that, if a fire occurs in the given area, no safe shutdown trains would be protected to an acceptable degree. Because Probabilistic Risk Assessment (PRA) studies continue to indicate that fire is a dominant contributor to risk, the inability to guarantee one train of safe shutdown capability, as required, is considered to be a condition that significantly degrades safety.

Comment P (Applicability of the backfit rule—no basis was stated): One commenter stated that in the proposed rule at Page 36303, Section VI., Backfit Analysis, the NRC stated that 10 CFR 50.109 does not apply without giving any basis for the claim.

Response: The discussion below, entitled Backfit Analysis, has been modified to provide the basis for the conclusion that 10 CFR 50.109 does not apply.

Comment Q (Modify ''unanalyzed condition that significantly affects safety''): Most commenters stated that in section 50.72(b)(2)(ii)(B), the phrase ''significantly affects plant safety'' has no positive or negative connotation. Reword the section to read, ''The nuclear power plant being in an unanalyzed condition that significantly degrades plant safety.''

Response: The NRC agrees. The phrase is revised as recommended for the reason stated.

Comment R (Recognize risk-significance factors): One commenter stated that Section 50.73(a)(1) fails to recognize any risk significance factors.

Response: The NRC does not agree. Section 50.73(a)(1) is general in nature and indicates that, unless otherwise specified in section 50.73, the licensee shall report an event if it occurred within the last three years regardless of the plant mode or power level, and regardless of the significance of the structure, system, or component that initiated the event. Risk factors are recognized elsewhere in section 50.73. For example, the requirement to report an event or condition that could have prevented fulfillment of the safety function of structures or systems is limited to those structures or systems that are needed to perform specific safety functions. The list of systems for which actuation must be reported is based on risk-significance. Lack of significance is the reason for the elimination of reporting for late surveillance tests where the equipment, when tested, is functional. It is also the basis for eliminating several other requirements, such as immediate notification under section 50.72 for many invalid actuations.

Comment S (Modify ''operation or condition prohibited by TS''): Section 50.73(a)(2)(i)(B) should be revised to read, ''Any operation or condition occurring within three years of the date of discovery which was prohibited by the plant's *CURRENT* Technical Specifications.'' This rewrite would direct plants that recently converted to Improved Standard Technical Specifications to apply the current requirements to the identified condition, rather than having to consider the previous requirements under old Technical Specifications which are no longer applicable.

Response: The NRC agrees. The issue involves the following scenario. A licensee discovers a historical operation or condition that was prohibited by the TS in effect at the time the operation or condition occurred. However, the prohibition has subsequently been removed from the TS. The event is not considered significant because subsequently the operation or condition was found to be acceptable and the Technical Specifications have been revised to permit it. Accordingly, the final rule eliminates the requirement to report such events.

Comment T (Reporting burden would not be decreased): In addition to the points discussed above under the heading ''Comment A,'' one commenter disagreed with the NRC's assessment that the proposed rule would represent an overall decrease in burden. This disagreement was based on the following points:

(a) (Telephone notifications are less burdensome than written LERs): Although the proposed rule would have decreased the number of phone-in reports pursuant to 10 CFR 50.72, the commenter believes this burden is very small when compared with the burden of processing and submitting Licensee Event Reports (LERs) pursuant to 10 CFR 50.73.

(b) (Actuation of systems that are currently excluded systems would become reportable): In the proposed rule, systems that were excluded from reporting requirements via previous rulemaking because they represented little or no safety significance have been reinstated (*e.g.*, Reactor Water Cleanup System). Such action will now lead to reporting all isolations, even those with no safety significance.

(c) *(Systems not classified as ESF would be treated as ESF):* Systems that are not classified as Engineered Safety Features (ESF) will now be treated as ESF (*e.g.*, Reactor Core Isolation Cooling System).

(d) *(Invalid actuations would be added to the reporting requirements):* Invalid actuations are now included in the reporting requirements. The impact of this change is that the clarifications for what used to be reportable have been deleted. Therefore, the proposed rule would treat all isolations or movements of a component as reportable regardless of safety significance.

(e) *(The requirements for human performance data would be increased):* The scope of information requested for human performance events has substantially increased, going well beyond previous direct root cause to now include associated contributing factors.

Response: The NRC believes that reporting burden will be decreased for the reasons described in the regulatory analysis. With regard to the specific bases cited for this comment:

(a) The NRC agrees that a telephone notification is less burdensome than a written LER. However, this does not mean that the reporting burden would be increased, or maintained, unless there is some increase in the number of LERs required under the final rule. This is not the case.

(b) The NRC does not agree that the proposed rule would have made actuation of previously excluded systems reportable. The previously excluded systems are: (i) Reactor water clean-up system; (ii) control room emergency ventilation system; (iii) reactor building ventilation system; (iv) fuel building ventilation system; or (v) auxiliary building ventilation system. None of these appeared on the proposed list of systems for which actuation would be reportable.

(c) The NRC believes that system actuations added by adoption of the proposed list of systems are outweighed by system actuations eliminated.

(d) The NRC does not agree that invalid actuations are being added to the reporting requirements, because they were already in the reporting requirements.

(e) See the response to Comment J.

Comment U (Incentive to disable safety systems): In addition to the points discussed above under the heading ''Comment E,'' one commenter indicated that reporting of invalid system actuations provided an incentive to disable safety systems.

Response: The NRC does not agree that it is necessary to eliminate reporting for invalid actuations to avoid creating an incentive to disable safety systems during maintenance activities to avoid the possibility of reporting an inadvertent actuation.

As discussed in the response to Comment E, there is a need for reporting of these events because they are used in making estimates of equipment reliability parameters, which in turn are needed to support the NRC's move towards risk-informed regulation. Also, in the final rule, licensees are not required to provide an immediate notification under Section 50.72 for an invalid system actuation. Furthermore, in the final rule licensees have the option of providing a telephone notification within 60 days, rather than submitting a written LER, for an invalid system actuation. These changes provide a drastic reduction in the burden of reporting for invalid system actuations. This burden reduction mitigates against any incentive to disable safety systems during maintenance in order to avoid the possibility of reporting an invalid actuation.

Comment V (Amend 10 CFR 76.120(d)(2) to allow 60 days): One commenter noted that the NRC plans to consider the idea of expanding the 60-day deadline for written reports to other regulations. The commenter recommended amending 10 CFR 76.120(d)(2) to allow 60 days for written reports required under that regulation.

Response: The NRC continues to plan to evaluate the need for rulemaking to modify 10 CFR Parts 72 and 73, including the suggestion that 60 days be allowed for written reports required under 10 CFR 72.75 and 73.71. As part of that effort, the NRC will also consider the suggestion that 60 days be allowed for written reports required under 10 CFR 76.120(d)(2).

Comment W (Enforcement levels): Some commenters indicated that the proposed characterization of Enforcement Level III for failure to provide a required 1-hour or 8-hour non-emergency telephone notification is too harsh in most cases. They indicated that in most cases the information provided in these non-emergency notifications has low safety significance.

Response: As discussed further below under the heading ''Enforcement,'' the philosophy of the Enforcement Policy changes is to base the significance of the reporting violation on its impact on the NRC's ability to provide proper oversight of licensee activities. Accordingly, in some cases, Severity Level III is appropriate for failure to make a required telephone notification and in other cases it is not.

Comment X (LER format and content): One commenter recommended that the NRC reconsider a ''check the box'' approach. The commenter indicated that such an approach could be crafted to make LER data entry easier, more consistent, and less ambiguous, without making LERs more difficult for the general public to understand.

Response: The NRC does not believe it is feasible to adopt a ''check the box'' in the final rule because the proposed rule did not include a proposal along those lines and development of a sound system would take considerable time, delaying issuance of the final rule.

Comment Y (Coordinate with performance indicator efforts): One commenter suggested careful coordinated consideration among the NRC staff responsible for this rulemaking and those responsible for performance indicator efforts to ensure that reports submitted under 10 CFR 50.73(a)(2)(v) are not being misapplied.

Response: The NRC agrees and the suggested coordination has taken place, and will continue in the future as well. As a result, it is not expected that the NRC will misapply reports submitted under 10 CFR 50.73(a)(2)(v).

Comment Z: One commenter recommended that telephone notifications due within 8 hours should only be required when activation of the NRC emergency response organization is actually required.

Response: The NRC does not agree that this is a feasible approach because activation of the NRC's emergency response organization is not a simple function of the reporting criterion under which an event is considered to be reportable. For example, the emergency response organization is sometimes activated for events which, at the time of reporting, are considered to correspond to lower levels of Emergency Classes or non-emergency reporting criteria.

Comment AA (Do not include criteria for reporting degraded steam generator tubes): The Statement of Considerations for the proposed rule and the Draft Revision 2 to NUREG–1022 would indicate that steam generator tube degradation is considered serious, and thus reportable as a seriously degraded reactor coolant system boundary, if the tubing fails to meet specific performance criteria involving margin against burst and accident induced leakage rate. Most commenters proposed that this guidance be deleted. They stated that the position was based on a Draft Regulatory Guide (DG–1074, Steam Generator Tube Integrity) that has not been approved. Discussions between the industry and the NRC are being held to define the steam generator program and Technical Specification requirements. Some of the examples provided in the proposed section are contrary to agreements that have been made between the industry and the NRC staff. Recognizing that these agreements are still evolving, the proposed revisions to the rule(s) and NUREG–1022 must agree with the final positions on steam generator issues.

Response: The details have been removed from the Statement of Considerations. The details in the final Revision 2 to NUREG–1022 have been modified to reflect the NRC staff's current thinking. The guidance is consistent with the steam generator tube integrity performance criteria and reporting guidelines currently under discussion. This reporting is needed to permit the staff to determine if further inquiry or action might be needed before the plant is restarted.

The NRC does not agree that it is necessary to delay issuance of this reporting guidance pending staff endorsement of the NEI 97–06 initiative. The NUREG–1022 guidance merely provides reasonable examples of degraded steam generator tube conditions which the NRC needs to evaluate. If it is determined in the future that different detailed guidance is needed, it can be issued at that time.

III. Discussion

1. Objectives

The purposes of sections 50.72 and 50.73 remain the same because the basic needs remain the same. The essential purpose of section 50.72 is '' * * * to provide the Commission with immediate reporting of * * * significant events where immediate Commission action to protect the public health and safety may be required or where the Commission needs timely and accurate information to respond to heightened public concern.'' (48 FR 39039; August 29, 1983). Section 50.73 ''* * * identifies the types of reactor events and problems that are believed to be significant and useful to the NRC in its effort to identify and resolve threats to public safety. It is designed to provide the information necessary for engineering studies of operational anomalies and trends and patterns analysis of operational occurrences. The same information can be used for other analytic procedures that will aid in identifying accident precursors.'' (48 FR 33851; July 26, 1983).

The objectives of these final amendments are as follows:

(1) To better align the reporting requirements with the NRC's needs for information to carry out its safety mission. An example is extending the required initial reporting times for some events, consistent with the time at which the reports are needed for NRC action.

(2) To reduce unnecessary reporting burden, consistent with the NRC's needs. An example is eliminating the

reporting of design and analysis defects and deviations with little or no risk-or safety-significance.

(3) To clarify the reporting requirements where needed. An example is clarifying the criteria for reporting design or analysis defects or deviations.

(4) Any changes should be consistent with NRC actions to improve integrated plant assessments. For example, reports that are needed in the assessment process should not be eliminated.

2. Section by Section Discussion of Final Amendments

General requirements and reportable events [section 50.72(a)(1) and section 50.73(a)(1)]. The term ''if it occurred within 3 years of the date of discovery'' is added to eliminate reporting for conditions that have not existed during the three years before discovery. Such a historical event has less significance, and assessing reportability for earlier times can consume considerable resources. For example, assume that a procedure is found to be unclear and, as a result, a question is raised as to whether the plant was ever operated in a prohibited condition. If operation in the prohibited condition is likely, the answer would be reasonably apparent based on the knowledge and experience of the plant's operators and/or a review of operating records for the past three years. The effort required to review all records older than three years in order to rule out the possibility is not warranted.

A sentence is added to indicate that for an invalid actuation reported under section 50.73(a)(2)(iv) the licensee may, at its option, provide a telephone notification to the NRC Operations Center within 60 days after discovery of the event in lieu of submitting a written LER. For this type of event, a telephone notification will provide the information needed and impose less burden than an LER.

General requirements [section 50.72(a)(5)]. The requirement to inform the NRC of the type of report being made (*i.e.,* Emergency Class declared, non-emergency 1-hour report, or non-emergency 8-hour report) is revised to refer to paragraph (a)(1) instead of referring to paragraph (a)(3) to correct a typographical error.

Required initial reporting times [sections 50.72(a)(5), (b)(1), (b)(2), and new section 50.72(b)(3); and sections 50.73(a)(1) and (d)]. In the final amendments, declaration of an Emergency Class continues to be reported immediately after notification of appropriate State or local agencies and not later than 1-hour after declaration. This includes declaration of an Unusual Event, the lowest Emergency Class.

Deviations from Technical Specifications authorized pursuant to 10 CFR 50.54(x) continue to be reported as soon as practical and in all cases within 1 hour of occurrence. These two criteria capture those events where there may be a need for immediate action by the NRC to protect public health and safety.

The requirement to report an event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been renumbered from section 50.72(b)(2)(vi) to section 50.72(b)(2)(xi). In other respects this reporting criterion is unchanged, and the event is reportable within 4 hours, if not reported within 1 hour. This provides the information at the time it may be needed to respond to heightened public concern.

The requirement to report a natural phenomenon or other external event that poses an actual threat to plant safety or significantly hampers site personnel in the performance of duties necessary for safe operation in section 50.72(b)(1)(iii) is deleted. Events of this type are captured by declaration of an Emergency Class, which is reportable within 1 hour.

The requirement to report an internal event that poses an actual threat to plant safety, or significantly hampers site personnel in the performance of duties necessary for safe operation, including fires, toxic gas releases, or radioactive releases in section 50.72(b)(1)(vi) is deleted. Events of this type are captured by declaration of an Emergency Class, which is reportable within 1 hour.

The requirement to report an airborne radioactive release or liquid effluent release that exceeds specific limits in section 50.72 (b)(2)(iv) is deleted. Releases that are large enough to warrant prompt notification are captured by declaration of an Emergency Class, which is reportable within 1 hour after the declaration. Releases that involve a news release or notification to other government agencies are reportable within 4 hours of the occurrence.

The remaining non-emergency events that are reportable by telephone under 10 CFR 50.72 are reportable as soon as practical and in all cases within 4 hours or 8 hours (instead of within 1 hour or 4 hours as was previously required). This reduces the unnecessary burden of rapid reporting, while:

(1) Capturing, within 4 hours, those events where there may be a need for the NRC to take a reasonably prompt action, such as partially activating its response plan to monitor the course of the event.

(2) Capturing, within 8 hours, those events where there may be a need for the NRC to take an action within about a day, such as initiating a special inspection or investigation.

See the response to Comment D, above, for further discussion.

Written LERs are due within 60 days after discovery of a reportable event or condition (instead of within 30 days as was previously required). Changing the time limit from 30 days to 60 days does not imply that licensees should take longer than they previously did to develop and implement corrective actions. They should continue to do so on a time scale commensurate with the safety significance of the issue. However, for those cases where it does take longer than thirty days to complete a root cause analysis, this change will result in fewer LERs that require amendment (by submittal of an amended report).

The term ''within 30 days of the discovery of a reportable event or situation'' is deleted from section 50.73(d). This provision is redundant to the provisions of section 50.73(a)(1), which requires that a licensee submit an LER within 60 days after discovery of an event described in section 50.73(a). Retaining the time limit, which is now 60 days, in section 50.73(d) would create a conflict with sections 20.2201 and 20.2203 which require licensees to submit LERs for the events described in those sections within 30 days and in accordance with section 50.73(d).

Operation or condition prohibited by technical specifications [section 50.73(a)(2)(i)(B)]. This criterion is modified to eliminate reporting if the Technical Specification is administrative in nature. Violations of administrative Technical Specifications have generally not been considered to warrant submittal of an LER, and since 1983 when the LER rule was issued the NRC's event reporting guidelines have excluded almost all cases of such reporting. This change makes the plain wording of the rule consistent with that guidance.

Also, this criterion is modified to eliminate reporting if the event consisted solely of a case of a late surveillance test where the oversight is corrected, the test is performed, and the equipment is found to be functional. This type of event has not proven to be significant because the equipment remained functional.

Finally, this criterion is modified to eliminate reporting of an operation or condition that occurred in the past and was prohibited at that time if, prior to discovery of the event, the Technical Specifications were revised such that the operation or condition is no longer prohibited. Such an event would have little or no significance because, by the time of discovery, the operation or condition would have been determined to be acceptable and thus permissible under current Technical Specifications.

The NRC expects licensees to include violations of the Technical Specifications in their corrective action programs, which are subject to NRC audit.

Condition of the nuclear power plant, including its principal safety barriers, being seriously degraded [former sections 50.72(b)(1)(ii) and (b)(2)(i), replaced by new section 50.72(b)(3)(ii)(A); and section 50.73(a)(2)(ii), renumbered to 50.73(a)(2)(ii)(A)]. Previously, 10 CFR 50.72(b)(1)(ii) and (b)(2)(i) provided the following distinction. During operation, a seriously degraded plant, including its principal safety barriers, was reportable within one hour. An event discovered while shutdown that had it been discovered during operation would have resulted in a seriously degraded plant, including its principal safety barriers, was reportable within 4 hours. The new 10 CFR 50.72(b)(3)(ii)(A) eliminates the distinction because there are no longer separate 1-hour and 4-hour categories of non-emergency reports for this criterion. There are only 8-hour non-emergency reports for this criterion.

Unanalyzed condition that significantly degrades plant safety [sections 50.72(b)(1)(ii)(A) and (b)(2)(i), replaced by new section 50.72(b)(3)(ii)(B); and section 50.73(a)(2)(ii)(A), renumbered to 50.73(a)(2)(ii)(B)]. Previously, 10 CFR 50.72(b)(1)(ii)(A) and (b)(2)(i) provided the following distinction. During operation, an unanalyzed condition that significantly compromised plant safety was reportable within 1 hour. An event discovered while shut down that had it been discovered during operation would have resulted in an unanalyzed condition that significantly compromised plant safety was reportable within 4 hours. The new 10 CFR 50.72(b)(2)(ii)(B) eliminates this distinction because there are no longer separate 1-hour and 4-hour categories of non-emergency reports for this reporting criterion. There are only 8-hour non-emergency reports for this criterion.

In addition, the new 10 CFR 50.72(b)(2)(ii)(B) and 50.73(a)(2)(ii)(B) refer to a condition that significantly degrades plant safety rather than a condition that significantly compromises plant safety. This is an editorial change intended to better reflect the nature of the criterion.

Condition that is outside the design basis of the plant [old section 50.72(b)(2)(ii)(B); and old section 50.73(a)(2)(ii)(B)]. This criterion is deleted. A condition outside the design basis of the plant is still required to be reported if it is significant enough to qualify under one or more of the following criteria.

Plant safety significantly degraded. If a condition outside the design basis of the plant (or any other unanalyzed condition) is significant enough that, as a result, plant safety is significantly degraded, the condition is reportable under sections 50.72(b)(2)(ii)(B) and 50.73(a)(2)(ii)(B) [*i.e.,* an unanalyzed condition that significantly degrades plant safety].

As was previously indicated in the 1983 Statements of Considerations for 10 CFR 50.72 and 50.73, with regard to an unanalyzed condition that significantly compromises plant safety, ''The Commission recognizes that the licensee may use engineering judgment and experience to determine whether an unanalyzed condition existed. It is not intended that this paragraph apply to minor variations in individual parameters, or to problems concerning single pieces of equipment. For example, at any time, one or more safety-related components may be out of service due to testing, maintenance, or a fault that has not yet been repaired. Any trivial single failure or minor error in performing surveillance tests could produce a situation in which two or more often unrelated, safety-grade components are out-of-service. Technically, this is an unanalyzed condition. However, these events should be reported only if they involve functionally related components or if they significantly compromise plant safety,'' (48 FR 39042; August 29, 1983 and 48 FR 33856, July 26, 1983).

''When applying engineering judgment, and there is a doubt regarding whether to report or not, the Commission's policy is that licensees should make the report,'' (48 FR 39042; August 29, 1983).

''For example, small voids in systems designed to remove heat from the reactor core which have been previously shown through analysis not to be safety significant need not be reported. However, the accumulation of voids that could inhibit the ability to adequately remove heat from the reactor core, particularly under natural circulation conditions, would constitute an unanalyzed condition and would be reportable,'' (48 FR 39042; August 29, 1983 and 48 FR 33856, July 26, 1983).

''In addition, voiding in instrument lines that results in an erroneous indication causing the operator to misunderstand the true condition of the plant is also an unanalyzed condition and should be reported,'' (48 FR 39042; August 29, 1983 and 48 FR 33856, July 26, 1983).

Furthermore, beyond the examples given in 1983, examples of reportable events include discovery that a system required to meet the single failure criterion does not do so.

In another example, if fire barriers are found to be missing, such that the required degree of separation for redundant safe shutdown trains is lacking, the event is reportable. On the other hand, if a fire wrap, to which the licensee has committed, is missing from a safe shutdown train but another safe shutdown train is available in a different fire area, protected such that the required separation for safe shutdown trains is still provided, the event is not reportable.

Structure or system not capable of performing its specified safety function. If a design or analysis defect or deviation (or any other event or condition) is significant enough that, as a result, a structure or system is not capable of performing its specified safety functions, the condition is reportable under sections 50.72(b)(3)(v) and 50.73(a)(2)(v) [*i.e.,* an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to: shut down the reactor * * *; remove residual heat; control the release of radioactive material; or mitigate the consequences of an accident].

For example, in one case an annual inspection indicated that some bearings were wiped or cracked on both emergency diesel generators (EDGs). Although the EDGs were running prior to the inspection, the event was reportable because there was reasonable doubt about the ability of the EDGs to operate for an extended period of time, as required.

Train inoperable longer than allowed. If a design or analysis defect or deviation (or any other event or condition) is significant enough that, as a result, one train of a multiple train system controlled by the plant's TS is not capable of performing its specified safety functions for a period of time longer than allowed by the TS, the condition is reportable under section 50.73(a)(2)(i)(B) [*i.e.,* an operation or condition prohibited by TS].

For example, if it is found that an exciter panel for one EDG lacks appropriate seismic restraints because of a design, analysis, or construction inadequacy and, as a result, there is reasonable doubt about the EDG's ability to perform its specified safety functions during and after a Safe Shutdown Earthquake (SSE), the event would be reportable.

Or, for example, if it is found that a loss of offsite power could cause a loss of instrument air and, as a result, there is reasonable doubt about the ability of one train of the auxiliary feedwater system to perform its specified safety functions for certain postulated steam line breaks, the event would be reportable.

Principal safety barrier seriously degraded. If a condition outside the design basis of the plant (or any other event or condition) is significant enough that, as a result, a principal safety barrier is seriously degraded, it is reportable under sections 50.72(b)(3)(ii)(A) and 50.73(a)(2)(ii)(A) [*i.e.,* any event or condition that results in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded]. This reporting criterion applies to material (e.g., metallurgical or chemical) problems that cause abnormal degradation of or stress upon the principal safety barriers (*i.e.,* the fuel cladding, reactor coolant system pressure boundary, or the containment) such as:

(i) Fuel cladding failures in the reactor, or in the storage pool, that exceed expected values, or that are unique or widespread, or that are caused by unexpected factors.

(ii) Welding or material defects in the primary coolant system which cannot be found acceptable under ASME Section XI, IWB–3600, ''Analytical Evaluation of Flaws'' or ASME Section XI, Table IWB–3410–1, ''Acceptance Standards.''

(iii) Serious steam generator tube degradation.

(iv) Low temperature over pressure transients where the pressure-temperature relationship violates pressure-temperature limits derived from Appendix G to 10 CFR Part 50 (e.g., TS pressure-temperature curves).

(v) Loss of containment function or integrity, including containment leak rate tests where the total containment as-found, minimum-pathway leak rate exceeds the limiting condition for operation (LCO) in the facility's TS.[1]

Common cause inoperability of independent trains or channels. If a condition outside the design basis of the plant (or any other event or condition) is significant enough that, as a result, independent trains or channels become inoperable, it would be reportable under section 50.73(a)(2)(vii) [*i.e.,* an event where a single cause or condition caused independent trains or channels to become inoperable]. For example, in one case it was found that independent circuit breakers, required to operate after a Loss-of-Coolant Accident (LOCA), were not qualified for the expected radiation levels (and were thus considered inoperable). In another example, a wiring error caused independent containment isolation valves to be incapable of properly closing (*i.e.,* they would not close tightly because they would stop closing based on limit switch operation rather than torque).

Single Cause that Could Have Prevented Fulfillment of the Safety Functions of Trains or Channels in Different Systems. Finally, a condition outside the design basis of the plant (or any other event or condition) would be reportable if it is significant enough that, as a result of a single cause, it could have prevented the fulfillment of a safety function for two or more trains or channels in different systems that are needed to:

(1) Shut down the reactor and maintain it in a safe shutdown condition;

(2) Remove residual heat;

(3) Control the release of radioactive material; or

(4) Mitigate the consequences of an accident.

This new criterion is contained in sections 50.73(a)(2)(ix)(A) and (B), as discussed below.

Single Cause that Could Have Prevented Fulfillment of the Safety Functions of Trains or Channels in Different Systems. [new sections 50.73(a)(2)(ix)(a) and (B)]. This new criterion requires reporting any event or condition that as a result of a single cause could have prevented the fulfillment of a safety function for two or more trains or channels in different systems that are needed to:

(1) Shut down the reactor and maintain it in a safe shutdown condition;

(2) Remove residual heat;

(3) Control the release of radioactive material; or

(4) Mitigate the consequences of an accident.

Events covered by this new criterion may include cases of procedural error, equipment failure, and/or discovery of a design, analysis, fabrication, construction, and/or procedural inadequacy. However, licensees are not required to report an event pursuant to this criterion if the event results from:

(1) A shared dependency among trains or channels that is a natural or expected consequence of the approved plant design; or

(2) Normal and expected wear or degradation.

Subject to the two exclusions stated above, this criterion captures those events where a single cause could have prevented the fulfillment of the safety function of multiple trains or channels, but the event:

(1) Would not be captured by §§ 50.73(a)(2)(v) and 50.72(b)(3)(v) [event or condition that could have prevented fulfillment of the safety function of structures and systems needed to . . .] because the affected trains or channels are in different systems; and

(2) Would not be captured by § 50.73(a)(2)(vii) [common cause inoperability of independent trains or channels] because the affected trains or channels are either:

(i) Not assumed to be independent in the plant's safety analysis; or

(ii) Not both considered to be inoperable.

This new criterion is closely related to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v) [event or condition that could have prevented fulfillment of the safety function of structures and systems needed to: shut down the reactor and maintain it in a safe shutdown condition; remove residual heat; control the release of radioactive material; or mitigate the consequences of an accident]. Specifically:

The meaning of the term ''could have prevented the fulfillment of the safety function'' is essentially the same for this new criterion as it is for §§ 50.73(a)(2)(v) and 50.72(b)(3)(v) [*i.e.,* there was a reasonable expectation of preventing the fulfillment of the safety function(s) involved]. However, in contrast to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v), reporting under this new criterion applies to trains or channels in different systems. Thus, for this new criterion, the safety function that is affected may be different in different trains or channels.

In contrast to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v), reporting under this new criterion applies only to a single cause. Also, in contrast to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v), this new criterion does not apply to an event that results from

[1] The LCO typically employs La, which is defined in Appendix J to 10 CFR Part 50 as the maximum allowable containment leak rate at pressure Pa, the calculated peak containment internal pressure related to the design basis accident. Minimum-pathway leak rate means the minimum leak rate that can be attributed to a penetration leakage path; for example, the smaller of either the inboard or outboard valve's individual leak rates.

a shared dependency among trains or channels that is a natural or expected consequence of the approved plant design. For example, this new criterion does not capture failure of a common electrical power supply that disables Train A of AFW and Train A of High Pressure Safety Injection (HPSI), because their shared dependency on the single power supply is a natural or expected consequence of the approved plant design.

Similar to §§ 50.73(a)(2)(v) and 50.72(b)(3)(v), this new criterion does not capture events or conditions that result from normal and expected wear or degradation. For example, consider pump bearing wear that is within the normal and expected range. In the case of two pumps in different systems, this new criterion categorically excludes normal and expected wear. In the case of two pumps in the same system, normal and expected wear should be adequately addressed by normal plant operating and maintenance practices and thus should not indicate a reasonable expectation of preventing fulfillment of the safety function of the system.

This criterion pertains only to written LERs required by 10 CFR 50.73. Telephone notifications are not required under this criterion.

It is estimated that the combination of removing the previous requirement to report a condition outside the design basis of the plant and adding this criterion will, on balance, result in fewer reports. In addition, the events reportable under this criterion are events that would likely have been considered reportable under the previous requirement to report a condition outside the design basis of the plant.

An example of an event that would be reportable under this criterion is as follows. During testing, two containment isolation valves failed to function as a result of improper air gaps in the solenoid operated valves that controlled the supply of instrument air to the containment isolation valves. The valves were powered from the same electrical division. Thus, § 50.73(a)(2)(vii) [common cause inoperability of independent trains or channels] would not apply. The two valves isolated fluid process lines in two different systems. Thus § 50.73(a)(2)(v) [condition that could have prevented fulfillment of the safety function of a structure or system] would apply only if engineering judgment indicates there was a reasonable expectation of preventing fulfillment of the safety function for redundant valves within the same system.[2] However, this new criterion would certainly apply if a single cause (such as a design inadequacy) induced the improper air gaps, thus preventing fulfillment of the safety function of two trains or channels in different systems.

Another example of an event reportable under this criterion is as follows. A motor operated valve in one train of a system was found with a crack 75 percent through the stem. Although the valve stem did not fail, engineering evaluation indicated that further cracking would occur which could have prevented fulfillment of its safety function. As a result, the train was not considered capable of performing its specified safety function and the valve stem was replaced with a new one.

The root cause was determined to be environmentally assisted stress corrosion cracking which resulted from installation of an inadequate material some years earlier. The same inadequate material had been installed in a similar valve in a different system at the same time. The similar valve was exposed to similar environmental conditions as the first valve.

The condition is reportable under this new criterion if engineering judgment indicates that there was a reasonable expectation of preventing fulfillment of the safety function of both affected trains. This depends on details such as whether the second valve stem was also significantly degraded and, if not, whether any future degradation of the second valve stem would have been discovered and corrected, as a result of routine maintenance programs, before it could become problematic.

Additional examples may be found in event reporting guidelines in NUREG–1022, Revision 2.

Condition not covered by the plant's operating and emergency procedures [former section 50.72(b)(1)(ii)(C); and former section 50.73(a)(2)(ii)(C)]. This criterion is deleted because it does not result in worthwhile reports aside from those that are captured by other reporting criteria such as:

(1) An unanalyzed condition that significantly degrades plant safety;

(2) An event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to: shutdown the reactor and maintain it in a safe shutdown condition; remove residual heat; control the release of radioactive material; or mitigate the consequences of an accident;

(3) An event or condition that results in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded;

(4) An operation or condition prohibited by the plant's TS;

(5) An event or condition that results in actuation of an ESF;

(6) An event that poses an actual threat to the safety of the nuclear power plant or significantly hampers site personnel in the performance of duties necessary for the safe operation of the nuclear power plant.

External event that poses an actual threat or significantly hampers personnel [former section 50.72(b)(1)(iii), deleted; and section 50.73(a)(2)(iii)]. This criterion requires reporting a natural phenomenon or other external event that poses an actual threat to plant safety, or significantly hampers site personnel in the performance of duties necessary for safe operation. Section 50.72(b)(1)(iii) is deleted because it is redundant to section 50.72(a)(1)(i). That is, events of this type are captured by declaration of an Emergency Class, which is reportable within 1 hour. Section 50.73(a)(2)(iii) is retained in order to ensure submittal of an LER. This provision is not redundant because there is no criterion in section 50.73 that generally requires an LER for declaration of an Emergency Class.

System actuation [old sections 50.72(b)(1)(iv) and (b)(2)(ii), replaced by new sections 50.72(b)(2)(iv)(A), (b)(2)(iv)(B), and (b)(3)(iv); and section 50.73(a)(2)(iv)]. Previously, sections 50.72(b)(1)(iv) and (b)(2)(ii) provided the following distinction: an event that results or should have resulted in ECCS discharge into the reactor coolant system as a result of a valid signal was reportable within 1 hour; any other engineered safety feature (ESF) actuation, including reactor protection system (RPS) actuation, was reportable within 4 hours. The new 10 CFR 50.72(b)(2)(iv)(A) requires reporting an event that results or should have resulted in ECCS discharge into the reactor coolant system as a result of a valid signal within 4 hours. The new section 50.72(b)(2)(iv)(B) requires reporting a reactor scram during critical operation within 4 hours. The new section 50.72(b)(3)(iv) requires reporting other ESF actuations within 8 hours. See the response to Comment D, above, for further discussion.

The new section 50.72(b)(2)(iv) eliminates telephone reporting for invalid actuations, except for actuation of the RPS when the reactor is critical. These events are not significant and thus telephone reporting is not needed. The final amendments do not eliminate

[2] Or, alterantively, there was reasonable doubt that the safety function would have been fulfilled if the affected trains has been called upon to perform them.

the requirement for reporting of an invalid actuation under 10 CFR 50.73. There is still a need for reporting of these events because they are used in making estimates of equipment reliability parameters, which in turn are needed to support the Commission's move towards risk-informed regulation. However, for an invalid actuation reported under section 50.73(a)(2)(iv), other than actuation of the RPS when the reactor is critical, section 50.73(a)(1) provides the option of making a telephone report to the NRC Operations Center within 60 days instead of submitting a written LER. The telephone report is far less burdensome. Sixty days is an appropriate time because the information is not needed immediately. (See the response to Comment E above for further discussion of this need.)

Previously, the rules generally required reporting the actuation of any ESF including the RPS. The final rule, instead, generally requires reporting for actuation of specific listed systems. These systems are:

(1) Reactor protection system (RPS) including: reactor scram or reactor trip.

(2) General containment isolation signals affecting containment isolation valves in more than one system or multiple main steam isolation valves (MSIVs).

(3) Emergency core cooling systems (ECCS) for pressurized water reactors (PWRs) including: high-head, intermediate-head, and low-head injection systems and the low pressure injection function of residual (decay) heat removal systems.

(4) ECCS for boiling water reactors (BWRs) including: high-pressure and low-pressure core spray systems; high-pressure coolant injection system; low pressure injection function of the residual heat removal system.

(5) BWR reactor core isolation cooling system; isolation condenser system; and feedwater coolant injection system.

(6) PWR auxiliary or emergency feedwater system.

(7) Containment heat removal and depressurization systems, including containment spray and fan cooler systems.

(8) Emergency ac electrical power systems, including: emergency diesel generators (EDGs); hydroelectric facilities used in lieu of EDGs at the Oconee Station; and BWR dedicated Division 3 EDGs.

(9) Emergency service water (ESW) systems that do not normally run and that serve as ultimate heat sinks. ESW system actuations are reportable under section 50.73 only.

This approach provides for consistent reporting of actuations for these highly risk-significant systems. At the same time, it eliminates reporting of actuations for systems of lesser risk-significance, such as actuation of ventilation systems that are considered to be ESFs.

Section 50.72 excludes reporting for an actuation that resulted from and was part of a pre-planned sequence during testing or reactor operation. It further excludes reporting of an invalid actuation, except for a reactor scram or reactor trip when the reactor is critical.

A valid actuation is one that results from either a ''valid signal'' or an intentional manual initiation. A ''valid signal'' is one that results from actual plant conditions or parameters satisfying the requirements for system actuation. An invalid actuation is one that does not meet the criteria for being valid.

Section 50.73 also excludes reporting for an actuation that resulted from and was part of a pre-planned sequence during testing or reactor operation. It further excludes reporting of an invalid actuation that occurred when the system was properly removed from service or an invalid actuation that occurred after the safety function had been already completed.

For those invalid actuations which *are* reportable under section 50.73, a licensee may provide a telephone notification within 60 days, rather than submitting an LER. This option to provide a telephone notification rather than an LER does not apply, however, to a reactor scram or reactor trip that occurs while the reactor is critical.

Event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to: shut down the reactor and maintain it in a safe shutdown condition; remove residual heat; control the release of radioactive material; or mitigate the consequences of an accident [former section 50.72(b)(2)(iii), replaced by new sections 50.72(b)(3)(v) and (b)(3)(vi); and sections 50.73(a)(2)(v) and (a)(2)(vi)]. The phrase ''event or condition that alone could have prevented the fulfillment of the safety function of structures or systems * * *'' is clarified by deleting the word ''alone''. This clarifies the requirements by more clearly reflecting the principle that it is necessary to consider other existing plant conditions in determining the reportability of an event or condition under this criterion. For example, if one train of a two train system is incapable of performing its safety function for one reason, and the other train is incapable of performing its safety function for a different reason, the event is reportable.

The term ''at the time of discovery'' is added to section 50.72(b)(3)(v) to eliminate telephone notification for a condition that no longer exists or no longer has an effect on required safety functions. For example, it might be discovered that at some time in the past both trains of a two train system were incapable of performing their safety function, but the condition was subsequently corrected and no longer exists. In another example, while the plant is shutdown, it might be discovered that during a previous period of operation a system was incapable of performing its safety function, but the system is not currently required to be operable. These events are considered significant, and an LER is required, but there is no need for telephone notification.

A new paragraph, section 50.72(b)(3)(vi) is added to clarify section 50.72. The new paragraph explicitly states that telephone reporting is not required under section 50.72(b)(2)(v) for single failures if redundant equipment in the same system was operable and available to perform the required safety function. That is, although one train of a system may be incapable of performing its safety function, reporting is not required under this criterion if that system is still capable of performing the safety function. This is the same principle that was and continues to be stated explicitly in section 50.73(a)(2)(vi) with regard to written LERs.

Airborne radioactive release or liquid effluent release [former section 50.72(b)(2)(iv), deleted; and section 50.73(a)(2)(viii), retained; and former section 50.73(a)(2)(ix), deleted]. These criteria require reporting releases of radioactive material at a very low level because, for a power reactor, such a release would indicate a breakdown in the licensee's programs to control releases—not because of the impact of such a release.

Section 50.72(b)(2)(iv) is deleted because immediate notification is not needed for releases at such a low level. Declaration of an Emergency Class, which occurs at a somewhat higher (but still low) level, captures releases that are large enough to warrant immediate notification. Declaration of an Emergency Class is reportable within 1 hour under section 50.72(a)(1)(i).

Section 50.73(a)(2)(viii) is retained in order to ensure submittal of an LER. Even if the release is very small, the NRC needs to review the event and consider whether action is needed to ensure the cause is addressed at other plants as appropriate. There is no criterion in section 50.73 that generally requires an LER for declaration of an Emergency Class.

Section 50.73(a)(2)(vix) is deleted because it is not correct. It indicated that reporting under section 50.73(a)(2)(viii) satisfied the requirements of section 20.2203(a)(3). However, some events captured by section 20.2203(a)(3) are not captured by section 50.73(a)(2)(viii).

Internal event that poses an actual threat or significantly hampers personnel [former section 50.72(b)(1)(vi), deleted; and section 50.73(a)(2)(x)]. This criterion requires reporting an internal event that poses an actual threat to plant safety, or significantly hampers site personnel in the performance of duties necessary for safe operation, including fires, toxic gas releases, or radioactive releases. Section 50.72(b)(1)(vi) is deleted because it is redundant to section 50.72(a)(1)(i). That is, events of this type are captured by declaration of an Emergency Class, which is reportable within 1 hour. Section 50.73(a)(2)(x) is retained in order to ensure submittal of an LER. This provision is not redundant because there is no criterion in section 50.73 that generally requires an LER for declaration of an Emergency Class.

Major loss of emergency assessment capability, offsite response capability, or communication capability [former section 50.72(b)(2)(v), replaced by new section 50.72(b)(3)(xii)]. The new section is modified by adding the word ''offsite'' in front of the term ''communications capability'' to make it clear that the requirement does not apply to internal plant communication systems.

Contents of LERs [section 50.73(b)(2)(ii)(F)]. Paragraph (F) is revised to correct the address of the NRC Library.

Spent fuel storage cask problems [former sections 50.72(b)(2)(vii) and 72.216(a)(1), (a)(2), and (b)]. The provisions of section 50.72(b)(2)(vii) are deleted because these reporting criteria are redundant to the reporting criteria contained in sections 72.216(a)(1) and (a)(2). Repetition of the same reporting criteria in different sections of the rules added unnecessary complexity and was inconsistent with the current practice in other areas, such as reporting of safeguards events as required by section 73.71.

Sections 72.216(a)(1) and (a)(2) place upon general licensees the same reporting criteria as are placed on specific licensees under sections 72.75(b)(2) and (b)(3). To avoid duplication in Part 72, sections 72.216(a)(1) and (a)(2) are deleted and section 72.216(c) is abridged to simply require that the general licensee shall make initial and written reports in accordance with sections 72.74 and 72.75. These changes eliminate a reference in section 72.216(a) to section 50.72(b)(2)(vii), now deleted, which had established the time limit for initial notification by general licensees. The same time limit is placed on general licensees by including them within the scope of section 72.75(b). Section 72.216(b) is also deleted because its requirements for a written report are encompassed by section 72.75(d)(2).

Exemptions [section 50.73(f)]. The provisions of this section are deleted because the exemption provisions in section 50.12 provide for granting of exemptions when they are warranted. Including another, section-specific exemption provision in section 50.73 adds unnecessary complexity to the rules.

3. Revisions to Event Reporting Guidelines in NUREG–1022

A report, NUREG–1022, Revision 2, ''Event Reporting Guidelines, 10 CFR 50.72 and 50.73,'' is being made available concurrently with the final amendments to 10 CFR 50.72 and 50.73. The report is available for inspection in the NRC Public Document Room or it may be viewed and downloaded electronically via the interactive rulemaking web site established by the NRC for this rulemaking, as discussed above under the heading **ADDRESSES.** Single copies may be obtained from the contact listed above under the heading **FOR FURTHER INFORMATION CONTACT**. In the report, guidance that is considered to be new or different in a meaningful way, relative to that provided in NUREG–1022, Revision 1, is indicated by underlining the appropriate text.

4. Reactor Oversight

The NRC is implementing revisions to the process for oversight of operating reactors, including inspection, assessment, and enforcement processes. In connection with this effort, the NRC has considered the kinds of event reports that would be eliminated by the final rules and concluded that the changes are consistent with the oversight process.

In connection with the proposed rule, public comment was invited on whether or not this is the case. In particular, it was requested that if any examples to the contrary are known they be identified. None were identified.

5. Enforcement

The NRC intends to modify its existing enforcement policy in connection with the final amendments to sections 50.72 and 50.73. The philosophy of the changes is to base the significance of the reporting violation on the impact on the NRC's ability to provide proper oversight of licensee activities. For example, a late report may impact the ability of the NRC to fulfill its obligations of fully understanding issues that are required to be reported in order to accomplish its public health and safety mission, which in many cases involves reacting to reportable issues or events. As such, the NRC intends to revise the Enforcement Policy, NUREG–1600 [3] as follows:

(1) Supplement I.C—Examples of Severity Level III violations.

(a) Example 11 will be revised to read as follows—A failure to provide the required 1-hour telephone notification of an emergency action taken pursuant to 10 CFR 50.54(x).

(b) An additional example will be added that will read as follows—A failure to provide a required 1-hour, 4-hour or 8-hour non-emergency telephone notification pursuant to 10 CFR 50.72, that substantially impacts agency response.

(c) An additional example will be added that will read as follows—A late 4-hour or 8-hour notification that substantially impacts agency response.

(2) Supplement I.D—Examples of Severity Level IV violations.

(a) Example 4, will be revised to read as follows—A failure to provide a required 60-day written LER pursuant to 10 CFR 50.73.

These changes in the Enforcement Policy will be consistent with the overall objective of the rule change of better aligning the reporting requirements with the NRC's reporting needs. The Enforcement Policy changes will correlate the Severity Level of the infractions with the relative importance of the information needed by the NRC.

Section IV.A.3 of the Enforcement Policy provides that the Severity Level of an untimely report may be reduced depending on the individual circumstances. In deciding whether the Severity Level should be reduced for an untimely 1-hour, 4-hour, or 8-hour non-emergency report, the impact that the failure to report had on any agency response will be considered. For example, if a delayed 8-hour reportable event impacted the timing of a followup inspection that was deemed necessary, then the Severity Level will not normally be reduced. Similarly, a late notification that delayed the NRC's

[3] The examples refer to those published in NUREG–1600, ''General Statement of Policy and Procedure for NRC Enforcement Actions,'' dated May 1, 2000.

ability to perform an engineering analysis of a condition to determine if additional regulatory action was necessary will generally not be considered for disposition at a reduced Severity Level.

6. Electronic Reporting

The NRC is currently in the process of implementing an electronic document management and reporting program, known as the Agency Wide Document Access and Management System (ADAMS) that will provide for electronic submittal of many types of reports, including LERs. Accordingly, no separate rulemaking effort to provide for electronic submittal of LERs is necessary.

7. State Input

Many States (Agreement States and Non-Agreement States) have agreements with power reactors to inform the States of plant issues. State reporting requirements are frequently triggered by NRC reporting requirements. Accordingly, the NRC sought State comment on issues related to the proposed amendments via letters to State Liaison Officers as well as by a specific request in the **Federal Register** notice on the proposed rule. Comments on the proposed rule were received from one State agency, as discussed above under the heading ''Comment D.''

8. Plain Language

The President's Memorandum dated June 1, 1998, entitled, ''Plain Language in Government Writing,'' directed that the Federal Government's writing be in plain language. The NRC requested comments on the proposed rule specifically with respect to the clarity and effectiveness of the language used. A number of suggestions aimed at improving the clarity and effectiveness of the language used were received and incorporated into the final rule.

IV. Environmental Impact: Categorical Exclusion

The NRC has determined that this proposed regulation is the type of action described in categorical exclusion 10 CFR 51.22(c)(3)(iii). Therefore, neither an environmental impact statement nor an environmental assessment has been prepared for this proposed regulation.

V. Backfit Analysis

The NRC has determined that the backfit rule, 10 CFR 50.109, does not apply to information collection and reporting requirements such as those contained in the final rule because they do not impose backfits as defined in 10 CFR 50.109(a)(1). Therefore, a backfit analysis has not been prepared. However, as discussed below, the NRC has prepared a regulatory analysis for the proposed rule, which examines the costs and benefits of the proposed requirements in this rule. The Commission regards the regulatory analysis as a disciplined process for assessing information collection and reporting requirements to determine that the burden imposed is justified in light of the potential safety significance of the information to be collected.

VI. Regulatory Analysis

The NRC prepared a draft regulatory analysis for the proposed rule to examine the costs and benefits of the alternatives considered by the NRC, and public comments on this analysis were requested in connection with the proposed rule. As discussed above under the heading ''Comment T,'' some commenters disagreed with the proposition that the rule would reduce reporting burden. These comments were addressed by incorporating changes into the final rule, such that the assumptions in the draft regulatory analysis are sustained, and no changes have been made to the regulatory analysis. The regulatory analysis is available for inspection in the NRC Public Document Room or it may be viewed and downloaded electronically via the interactive rulemaking web site established by NRC for this rulemaking, as discussed above under the heading **ADDRESSES.** Single copies may be obtained from the contact listed above under the heading **FOR FURTHER INFORMATION CONTACT.**

VII. Paperwork Reduction Act Statement

This final rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule has been reviewed and approved by the Office of Management and Budget, approval numbers 3150–0011 and 3150–0104.

The annual public reporting burden for the currently existing reporting requirements in 10 CFR 50.72 and 50.73 is estimated to average about 700 hours per nuclear power reactor, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. It is estimated that the proposed amendments would impose a one-time implementation burden of about 200 hours per reactor. The recurring annual information collection burden is estimated to be reduced by 132 hours per reactor.

Send comments on any aspect of this information collection, including suggestions for reducing this burden, to the Records Management Branch (T–6E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001 or by Internet electronic mail to BJS1@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB–10202, (3150–0011 AND 3150–0104); Office of Management and Budget, Washington, DC 20503.

Public Protection Notification

If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, an information collection.

VIII. Regulatory Flexibility Act Certification

In accordance with the Regulatory Flexibility Act (5 U.S.C. 605(b)), the Commission certifies that this rule does not have a significant economic impact on a substantial number of small entities. This proposed rule affects only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the scope of the definition of ''small entities'' set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

IX. Small Business Regulatory Enforcement Fairness Act

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of OMB.

X. National Technology Transfer and Advancement Act

The National Technology Transfer and Advancement Act of 1995, Pub. L. 104–113, requires that Federal agencies use technical standards developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. There are no consensus standards regarding the reporting of safety information by nuclear power plant licensees to regulatory authorities that would apply to the requirements imposed by this rule. Thus, the provisions of the Act do not apply to this rule.

XI. Final Amendments

List of Subjects

10 CFR Part 50

Antitrust, Classified information, Criminal penalties, Fire prevention, Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

10 CFR Part 72

Criminal penalties, Manpower training programs, Nuclear materials, Occupational safety and health, Reporting and recordkeeping requirements, Security measures, Spent fuel.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is adopting the following amendments to 10 CFR Part 50 and 10 CFR Part 72.

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

1. The authority citation for Part 50 continues to read as follows:

Authority: Secs. 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

Section 50.7 also issued under Pub. L. 95–601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5851). Section 50.10 also issued under secs. 101, 185, 68 Stat. 955 as amended (42 U.S.C. 2131, 2235), sec. 102, Pub. L. 91–190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.13, 50.54(D.D.), and 50.103 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138). Sections 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a and Appendix Q also issued under sec. 102, Pub. L. 91–190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under sec. 204, 88 Stat. 1245 (42 U.S.C. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97–415, 96 Stat. 2073 (42 U.S.C. 2239). Section 50.78 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Appendix F also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. Section 50.72 is amended by revising paragraphs (a) and (b) to read as follows:

§ 50.72 Immediate notification requirements for operating nuclear power reactors.

(a) *General requirements.*[1] (1) Each nuclear power reactor licensee licensed under § 50.21(b) or § 50.22 of this part shall notify the NRC Operations Center via the Emergency Notification System of:

(i) The declaration of any of the Emergency Classes specified in the licensee's approved Emergency Plan;[2] or

(ii) Those non-emergency events specified in paragraph (b) of this section that occurred within three years of the date of discovery.

(2) If the Emergency Notification System is inoperative, the licensee shall make the required notifications via commercial telephone service, other dedicated telephone system, or any other method which will ensure that a report is made as soon as practical to the NRC Operations Center.[3]

(3) The licensee shall notify the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes.

(4) The licensee shall activate the Emergency Response Data System (ERDS)[4] as soon as possible but not later than one hour after declaring an Emergency Class of alert, site area emergency, or general emergency. The ERDS may also be activated by the licensee during emergency drills or exercises if the licensee's computer system has the capability to transmit the exercise data.

(5) When making a report under paragraph (a)(1) of this section, the licensee shall identify:

(i) The Emergency Class declared; or

(ii) Paragraph (b)(1), ''One-hour reports,'' paragraph (b)(2), ''Four-hour reports,'' or paragraph (b)(3), ''Eight-hour reports,'' as the paragraph of this section requiring notification of the non-emergency event.

(b) *Non-emergency events*—(1) *One-hour reports.* If not reported as a declaration of an Emergency Class under paragraph (a) of this section, the licensee shall notify the NRC as soon as practical and in all cases within one hour of the occurrence of any deviation from the plant's Technical Specifications authorized pursuant to § 50.54(x) of this part.

(2) *Four-hour reports.* If not reported under paragraphs (a) or (b)(1) of this section, the licensee shall notify the NRC as soon as practical and in all cases, within four hours of the occurrence of any of the following:

(i) The initiation of any nuclear plant shutdown required by the plant's Technical Specifications.

(ii)–(iii) [Reserved]

(iv)(A) Any event that results or should have resulted in emergency core cooling system (ECCS) discharge into the reactor coolant system as a result of a valid signal except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation.

(B) Any event or condition that results in actuation of the reactor protection system (RPS) when the reactor is critical except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation.

(v)–(x) [Reserved]

(xi) Any event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made. Such an event may include an onsite fatality or inadvertent release of radioactively contaminated materials.

(3) *Eight-hour reports.* If not reported under paragraphs (a), (b)(1) or (b)(2) of this section, the licensee shall notify the NRC as soon as practical and in all cases within eight hours of the occurrence of any of the following:

(i) [Reserved]

(ii) Any event or condition that results in:

(A) The condition of the nuclear power plant, including its principal safety barriers, being seriously degraded; or

(B) The nuclear power plant being in an unanalyzed condition that significantly degrades plant safety.

(iii) [Reserved]

(iv)(A) Any event or condition that results in valid actuation of any of the systems listed in paragraph (b)(3)(iv)(B) of this section, except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation.

(B) The systems to which the requirements of paragraph (b)(3)(iv)(A) of this section apply are:

[1] Other requirements for immediate notification of the NRC by licensed operating nuclear power rectors are contained elsewhere in this chapter, in particular §§ 20.1906, 20.2202, 50.36, 72.216, and 73.71.

[2] These Emergency Classes are addressed in Appendix E of this part.

[3] Commercial telephone number of the NRC Operations Center is (301) 816–5100.

[4] Requirements for ERDS are addressed in Appendix E, Section VI.

(*1*) Reactor protection system (RPS) including: Reactor scram and reactor trip.[5]

(*2*) General containment isolation signals affecting containment isolation valves in more than one system or multiple main steam isolation valves (MSIVs).

(*3*) Emergency core cooling systems (ECCS) for pressurized water reactors (PWRs) including: High-head, intermediate-head, and low-head injection systems and the low pressure injection function of residual (decay) heat removal systems.

(*4*) ECCS for boiling water reactors (BWRs) including: High-pressure and low-pressure core spray systems; high-pressure coolant injection system; low pressure injection function of the residual heat removal system.

(*5*) BWR reactor core isolation cooling system; isolation condenser system; and feedwater coolant injection system.

(*6*) PWR auxiliary or emergency feedwater system.

(*7*) Containment heat removal and depressurization systems, including containment spray and fan cooler systems.

(*8*) Emergency ac electrical power systems, including: Emergency diesel generators (EDGs); hydroelectric facilities used in lieu of EDGs at the Oconee Station; and BWR dedicated Division 3 EDGs.

(v) Any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to:

(A) Shut down the reactor and maintain it in a safe shutdown condition;

(B) Remove residual heat;

(C) Control the release of radioactive material; or

(D) Mitigate the consequences of an accident.

(vi) Events covered in paragraph (b)(3)(v) of this section may include one or more procedural errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported pursuant to paragraph (b)(3)(v) of this section if redundant equipment in the same system was operable and available to perform the required safety function.

(vii)–(xi) [Reserved]

(xii) Any event requiring the transport of a radioactively contaminated person to an offsite medical facility for treatment.

[5] Actuation of the RPS when the reactor is critical is reportable under paragraph (b)(2)(iv)(B) of this section.

(xiii) Any event that results in a major loss of emergency assessment capability, offsite response capability, or offsite communications capability (*e.g.,* significant portion of control room indication, Emergency Notification System, or offsite notification system).

* * * * *

3. Section 50.73 is amended by revising sections (a), (b)(2)(ii)(F), (b)(2)(ii)(J), (b)(3), (d), and (e) and by removing and reserving paragraph (f) to read as follows:

§ 50.73 Licensee event report system.

(a) Reportable events. (1) The holder of an operating license for a nuclear power plant (licensee) shall submit a Licensee Event Report (LER) for any event of the type described in this paragraph within 60 days after the discovery of the event. In the case of an invalid actuation reported under § 50.73(a)(2)(iv), other than actuation of the reactor protection system (RPS) when the reactor is critical, the licensee may, at its option, provide a telephone notification to the NRC Operations Center within 60 days after discovery of the event instead of submitting a written LER. Unless otherwise specified in this section, the licensee shall report an event if it occurred within three years of the date of discovery regardless of the plant mode or power level, and regardless of the significance of the structure, system, or component that initiated the event.

(2) The licensee shall report:

(i)(A) The completion of any nuclear plant shutdown required by the plant's Technical Specifications.

(B) Any operation or condition which was prohibited by the plant's Technical Specifications except when:

(*1*) The Technical Specification is administrative in nature;

(*2*) The event consisted solely of a case of a late surveillance test where the oversight was corrected, the test was performed, and the equipment was found to be capable of performing its specified safety functions; or

(*3*) The Technical Specification was revised prior to discovery of the event such that the operation or condition was no longer prohibited at the time of discovery of the event.

(C) Any deviation from the plant's Technical Specifications authorized pursuant to § 50.54(x) of this part.

(ii) Any event or condition that resulted in:

(A) The condition of the nuclear power plant, including its principal safety barriers, being seriously degraded; or

(B) The nuclear power plant being in an unanalyzed condition that significantly degraded plant safety.

(iii) Any natural phenomenon or other external condition that posed an actual threat to the safety of the nuclear power plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant.

(iv)(A) Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section, except when:

(*1*) The actuation resulted from and was part of a pre-planned sequence during testing or reactor operation; or

(*2*) The actuation was invalid and;

(*i*) Occurred while the system was properly removed from service; or

(*ii*) Occurred after the safety function had been already completed.

(B) The systems to which the requirements of paragraph (a)(2)(iv)(A) of this section apply are:

(*1*) Reactor protection system (RPS) including: reactor scram or reactor trip.

(*2*) General containment isolation signals affecting containment isolation valves in more than one system or multiple main steam isolation valves (MSIVs).

(*3*) Emergency core cooling systems (ECCS) for pressurized water reactors (PWRs) including: high-head, intermediate-head, and low-head injection systems and the low pressure injection function of residual (decay) heat removal systems.

(*4*) ECCS for boiling water reactors (BWRs) including: high-pressure and low-pressure core spray systems; high-pressure coolant injection system; low pressure injection function of the residual heat removal system.

(*5*) BWR reactor core isolation cooling system; isolation condenser system; and feedwater coolant injection system.

(*6*) PWR auxiliary or emergency feedwater system.

(*7*) Containment heat removal and depressurization systems, including containment spray and fan cooler systems.

(*8*) Emergency ac electrical power systems, including: emergency diesel generators (EDGs); hydroelectric facilities used in lieu of EDGs at the Oconee Station; and BWR dedicated Division 3 EDGs.

(*9*) Emergency service water systems that do not normally run and that serve as ultimate heat sinks.

(v) Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to:

(A) Shut down the reactor and maintain it in a safe shutdown condition;

(B) Remove residual heat;

(C) Control the release of radioactive material; or

(D) Mitigate the consequences of an accident.

(vi) Events covered in paragraph (a)(2)(v) of this section may include one or more procedural errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported pursuant to paragraph (a)(2)(v) of this section if redundant equipment in the same system was operable and available to perform the required safety function.

(vii) Any event where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a single system designed to:

(A) Shut down the reactor and maintain it in a safe shutdown condition;

(B) Remove residual heat;

(C) Control the release of radioactive material; or

(D) Mitigate the consequences of an accident.

(viii)(A) Any airborne radioactive release that, when averaged over a time period of 1 hour, resulted in airborne radionuclide concentrations in an unrestricted area that exceeded 20 times the applicable concentration limits specified in appendix B to part 20, table 2, column 1.

(B) Any liquid effluent release that, when averaged over a time period of 1 hour, exceeds 20 times the applicable concentrations specified in appendix B to part 20, table 2, column 2, at the point of entry into the receiving waters (*i.e.*, unrestricted area) for all radionuclides except tritium and dissolved noble gases.

(ix)(A) Any event or condition that as a result of a single cause could have prevented the fulfillment of a safety function for two or more trains or channels in different systems that are needed to:

(*1*) Shut down the reactor and maintain it in a safe shutdown condition;

(*2*) Remove residual heat;

(*3*) Control the release of radioactive material; or

(*4*) Mitigate the consequences of an accident.

(B) Events covered in paragraph (a)(2)(ix)(A) of this section may include cases of procedural error, equipment failure, and/or discovery of a design, analysis, fabrication, construction, and/or procedural inadequacy. However, licensees are not required to report an event pursuant to paragraph (a)(2)(ix)(A) of this section if the event results from:

(*1*) A shared dependency among trains or channels that is a natural or expected consequence of the approved plant design; or

(*2*) Normal and expected wear or degradation.

(x) Any event that posed an actual threat to the safety of the nuclear power plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant including fires, toxic gas releases, or radioactive releases.

(b) * * *

(2) * * *

(ii) * * *

(F) The Energy Industry Identification System component function identifier and system name of each component or system referred to in the LER.

(*1*) The Energy Industry Identification System is defined in: IEEE Std 803–1983 (May 16, 1983) Recommended Practice for Unique Identification in Power Plants and Related Facilities—Principles and Definitions.

(*2*) IEEE Std 803–1983 has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(*3*) A notice of any changes made to the material incorporated by reference will be published in the **Federal Register**. Copies may be obtained from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855–1331. IEEE Std 803–1983 is available for inspection at the NRC's Technical Library, which is located in the Two White Flint North Building, 11545 Rockville Pike, Rockville, Maryland 20852–2738; and at the Office of the **Federal Register**, 800 North Capitol Street, Suite 700, NW, Washington, DC 2001.

* * * * *

(J) For each human performance related root cause, the licensee shall discuss the cause(s) and circumstances.

* * * * *

(3) An assessment of the safety consequences and implications of the event. This assessment must include:

(i) The availability of systems or components that could have performed the same function as the components and systems that failed during the event, and

(ii) For events that occurred when the reactor was shutdown, the availability of systems or components that are needed to shutdown the reactor and maintain safe shutdown conditions, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident.

* * * * *

(d) *Submission of reports.* Licensee Event Reports must be prepared on Form NRC 366 and submitted to the U.S. Nuclear Regulatory Commission, as specified in § 50.4.

(e) *Report legibility.* The reports and copies that licensees are required to submit to the Commission under the provisions of this section must be of sufficient quality to permit legible reproduction and micrographic processing.

(f) [Reserved]

* * * * *

PART 72—LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE

4. The authority citation for part 72 continues to read as follows:

Authority: Secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 189, 68 Stat. 929, 930, 932, 933, 934, 935, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2232, 2233, 2234, 2236, 2237, 2238, 2282); sec. 274, Pub. L. 86–373, 73 Stat. 688, as amended (42 U.S.C. 5841, 5842, 5846); Pub. L. 95–601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102–486, sec. 7902, 106 Stat. 3123 (42 U.S.C. 5851); sec. 102, Pub. L. 91–190, 83 Stat. 853 (42 U.S.C. 4332); secs. 131, 132, 133, 135, 137, 141, Pub. L. 97–425, 96 Stat. 2229, 2230, 2232, 2241, sec. 148, Pub. L. 100–203, 101 Stat. 1330–235 (42 U.S.C. 10151, 10152, 10153, 10155, 10157, 10161, 10168).

Section 72.44(g) also issued under secs. 142(b) and 148(c), (d), Pub. L. 100–203, 101 Stat. 1330–232, 1330–236 (42 U.S.C. 10162(b), 10168(c), (d)). Section 72.46 also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239); sec. 134, Pub. L. 97–425, 96 Stat. 2230 (42 U.S.C. 10154). Section 72.96(d) also issued under sec. 145(g), Pub. L. 100–203, 101 Stat. 1330–235 (42 U.S.C. 10165(g)). Subpart J also issued under secs. 2(2), 2(15), 2(19), 117(a), 141(h), Pub. L. 97–425, 96 Stat. 2202, 2203, 2204, 2222, 2224, (42 U.S.C. 10101, 10137(a), 10161(h)). Subparts K and L are also issued under sec. 133, 98 Stat. 2230 (42 U.S.C. 10153) and sec. 218(a), 96 Stat. 2252 (42 U.S.C. 10198).

5. Section 72.216 is revised to read as follows:

§ 72.216 Reports.

(a) [Reserved]

(b) [Reserved]

(c) The general licensee shall make initial and written reports in accordance with §§ 72.74 and 72.75.

Dated at Rockville, Maryland, this 18th day of October, 2000.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook

Secretary of the Commission.

[FR Doc. 00–27283 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–P

NATIONAL CREDIT UNION ADMINISTRATION

12 CFR Part 792

The Production of Nonpublic Records and Testimony of NCUA Employees in Legal Proceedings and the Privacy Act

AGENCY: National Credit Union Administration (NCUA).

ACTION: Final rule.

SUMMARY: NCUA is making minor and technical revisions to its regulation implementing the Privacy Act of 1974 (PA). The revised rule is updated to conform to current law governing the method an individual may use to establish his or her identity to obtain access to protected records and the requirements for the release of medical records. The revised rule changes time limits so that they conform more closely to those under the Freedom of Information Act (FOIA) and clarifies that the agency maintains four, rather than three, systems of records subject to exemptions under the PA. The revision also updates the rule to reflect organizational changes within NCUA and corrects cross-references in Subpart C, which governs the production of nonpublic records and the testimony of NCUA employees in legal proceedings.

DATES: This rule is effective November 24, 2000.

FOR FURTHER INFORMATION CONTACT: Dianne M. Salva, Staff Attorney, Division of Operations, Office of General Counsel, at the above address or telephone: (703) 518–6540.

SUPPLEMENTARY INFORMATION: On June 12, 2000, NCUA published a proposal to revise its PA regulation, announcing that it would accept comments from the public for a period of 60 days. 65 FR 36797, June 12, 2000. All comments submitted to NCUA were favorable.

As part of a government-wide initiative, NCUA reviewed its practices related to privacy and personal information in federal records. In its review of the agency systems of records, it identified several changes in record keeping practices and agency organization. As a result, NCUA revised its systems notices to make them clearer and simpler and to eliminate redundancies. 65 FR 3486, January 21, 2000. Now, as a result of its review of the PA regulation, NCUA is updating the regulation to reflect current law, terminology and organizational functions and clarify which of its systems of records are subject to PA exemptions. The changes are minor and technical and streamline the regulation to make it clearer and simpler to use.

Regulatory Procedures

Paperwork Reduction Act

This regulation imposes no additional information collection, reporting or record keeping requirements.

Regulatory Flexibility Act

Pursuant to section 605(b) of the Regulatory Flexibility Act (5 U.S.C. 605(b)), NCUA certifies that this rule will not have a significant economic impact on a substantial number of small entities. NCUA expects that this amended rule will not: (1) Have significant secondary or incidental effects on a substantial number of small entities; or (2) create any additional burden on small entities. These conclusions are based on the fact that the regulation's changes are minor and are intended to simplify and clarify agency record keeping and disclosure procedures. Accordingly, a regulatory flexibility analysis is not required.

Executive Order 13132

Executive Order 13132 encourages independent regulatory agencies to consider the impact of their regulatory actions on state and local interests. In adherence to fundamental federalism principles, NCUA, an independent regulatory agency as defined in 44 U.S.C. 3502(5), voluntarily complies with the executive order. This rule is procedural in nature and will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. NCUA has determined that the rule does not constitute a policy that has federalism implications for purposes of the executive order.

Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121) provides generally for congressional review of agency rules. A reporting requirement is triggered in instances where NCUA issues a final rule as defined by section 551 of the Administrative Procedures Act. 5 U.S.C. 551. NCUA has recommended to the Office of Management and Budget that it determine that this is not a major rule, and is awaiting its determination.

The Treasury and General Government Appropriations Act, 1999—Assessment of Federal Regulations and Policies on Families

The NCUA has determined that this rule will not affect family well-being within the meaning of section 654 of the Treasury and General Government Appropriations Act, 1999, Public Law 105–277, 112 Stat. 2681 (1998).

Agency Regulatory Goal

NCUA's goal is to promulgate clear and understandable regulations that impose minimal regulatory burden. We find that these amendments are understandable and minimally intrusive.

List of Subjects in 12 CFR Part 792

Administrative practice and procedure, Archives and records, Credit unions, Information, Records.

By the National Credit Union Administration Board on October 19, 2000.

Becky Baker,

Secretary of the Board.

For the reasons set out in the preamble, the NCUA amends 12 CFR part 792 as follows:

PART 792—REQUESTS FOR INFORMATION UNDER THE FREEDOM OF INFORMATION ACT AND PRIVACY ACT, AND BY SUBPOENA; SECURITY PROCEDURES FOR CLASSIFIED INFORMATION

1. The authority citation for part 792 continues to read as follows:

Authority: 5 U.S.C. 301, 552, 552a, 552b; 12 U.S.C. 1752a(d), 1766, 1789, 1795f; E.O. 12600, 52 FR 23781, 3 CFR, 1987 Comp., p. 235; E.O. 12958, 60 FR 19825, 3 CFR, 1995 Comp., p. 333.

§ 792.41 [Amended]

2. In § 792.41, remove "§ 792.4(b)(2)" and add, in its place, "§ 792.32."

§ 792.47 [Amended]

3. In § 792.47(b), remove "§ 792.5" and add, in its place, "§ 792.19."

§ 792.49 [Amended]

4. In § 792.49, in the definition of *Nonpublic records,* remove "§ 792.3" and add, in its place, "§ 792.11".

5. Amend § 792.55 by revising paragraph (a)(3) to read as follows:

§ 792.55 Times, places and requirements for identification of individuals making requests and identification of records requested.

(a) * * *

(3) An individual seeking access to records about himself by mail or in person, who cannot provide the required documentation or identification, may provide an unsworn declaration subscribed to as true under penalty of perjury.

* * * * *

6. Amend § 792.56 by revising paragraphs (b)(1), (b)(2) and (b)(3) to read as follows:

§ 792.56 Notice of existence of records, access decisions and disclosure of requested information; time limits.

* * * * *

(b) * * *

(1) A request concerning a single system of records which does not require consultation with or requisition of records from another agency will be responded to within 20 working days after receipt of the request.

(2) A request requiring requisition of records from or consultation with another agency will be responded to within 30 working days of receipt of the request.

(3) If a request under paragraphs (b)(1) or (2) of this section presents unusual difficulties in determining whether the records involved are exempt from disclosure, the Privacy Act Officer, in the Office of General Counsel, may extend the time period established by the regulations by 10 working days.

* * * * *

7. Amend § 792.57 by revising paragraph (b) to read as follows:

§ 792.57 Special Procedures: Information furnished by other agencies; medical records.

* * * * *

(b) When an individual requests medical records concerning himself, the NCUA official responsible for action on the request may advise the individual that the records to be released will be provided first to a physician designated in writing by the individual. The physician will provide the records to the individual.

8. Amend § 792.58 by revising the fourth sentence of paragraph (a) to read as follows:

§ 792.58 Requests for correction or amendment to a record; administrative review of requests.

* * * * *

(a) * * * An individual who does not have access to NCUA's ''Notice of Systems of Records,'' and to whom the appropriate address is otherwise unavailable, may submit a request to the Privacy Act Officer, Office of General Counsel, National Credit Union Administration, 1775 Duke Street, Alexandria, Virginia, 22314–3428, in which case the request will then be referred to the appropriate NCUA official. * * *

* * * * *

9. Amend § 792.59 by revising paragraph (e) to read as follows:

§ 792.59 Appeal of initial determination.

* * * * *

(e) If access is denied because of an exemption, the individual will be notified of the right to appeal that determination to the General Counsel within 30 days after receipt. Appeals will be determined within 20 working days.

10. Amend § 792.65 by revising paragraph (a)(1) to read as follows:

§ 792.65 Fees.

(a) * * *

(1) For copies of documents provided, copy fees as stated in NCUA's current FOIA fee schedule; and

* * * * *

11. Amend § 792.66 by revising the first sentence of paragraph (a), and the first two sentences of paragraph (b)(1), and the first sentence of paragraph (b)(2), and adding a new paragraph (b)(4) as follows:

§ 792.66 Exemptions.

(a) NCUA maintains four systems of records that are exempted from some provisions of the Privacy Act. * * *

(b)(1) System NCUA–1, entitled ''Employee Suitability Security Investigations Containing Adverse Information,'' consists of adverse information about NCUA employees that had been obtained as a result of routine U.S. Office of Personnel Management (OPM) security Investigations. To the extent that NCUA maintains records in this system pursuant to OPM guidelines that may require retrieval of information by use of individual identifiers, those records are encompassed by and included in the OPM Central system of records number Central-9 entitled, ''Personnel Investigations Records,'' and thus are subject to the exemptions promulgated by OPM. * * *

(2) System NCUA–8, entitled, ''Investigative Reports Involving Any Crime or Suspicious Activity Against a Credit Union, NCUA,'' consists of investigatory or enforcement records about individuals suspected of involvement in violations of laws or regulations, whether criminal or administrative. * * *

* * * * *

(4) System NCUA–13, entitled, ''Litigation Case Files,'' consists of investigatory materials compiled for law enforcement purposes. Records in the Litigation Case Files system are used in connection with the execution of NCUA's legal and enforcement responsibilities. Because the system covers investigatory materials compiled for law enforcement purposes, it is eligible for exemption under subsection (k)(2) of the Privacy Act. 5 U.S.C. 552a(k)(2). The Litigation Case Files system is exempt from subsections (c)(3), (d), (e)(1), (e)(4)(G), (H), (I) and (f) of the Privacy Act. 5 U.S.C. 552a (c)(3), (d), (e)(1), (e)(4)(G), (H), (I) and (f). However, if an individual is denied any right, privilege, or benefit to which he would otherwise be entitled by federal law, or for which he otherwise would be eligible, as a result of the maintenance of such records, the records or information will be made available to him, provided the identity of a confidential source is not disclosed.

* * * * *

12. Amend § 792.69 by revising the first sentence of paragraph (a) to read as follows:

§ 792.69 Training and employee standards of conduct with regard to privacy.

(a) The Director of the Office of Training and Development, with advice from the General Counsel, is responsible for training NCUA employees in the obligations imposed by the Privacy Act and this subpart. * * *

* * * * *

[FR Doc. 00–27364 Filed 10–24–00; 8:45 am]

BILLING CODE 7535–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 99–NM–364–AD; Amendment 39–11945; AD 2000–21–13]

RIN 2120–AA64

Airworthiness Directives; Dornier Model 328–300 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to all Dornier Model 328–300 series airplanes, that requires revising the Airplane Flight Manual. This action

is necessary to prevent an undetected dragging parking brake, and consequent decreased acceleration during the takeoff roll, increased takeoff distance, and possible runway overrun. This action is intended to address the identified unsafe condition.

DATES: Effective November 29, 2000.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the **Federal Register** as of November 29, 2000.

ADDRESSES: The service information referenced in this AD may be obtained from FAIRCHILD DORNIER, DORNIER Luftfahrt GmbH, P.O. Box 1103, D–82230 Wessling, Germany. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the **Federal Register**, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Norman B. Martenson, Manager, International Branch, ANM–116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–2110; fax (425) 227–1149.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to all Dornier Model 328–300 series airplanes was published in the **Federal Register** on June 30, 2000 (65 FR 40553). That action proposed to require revising the Airplane Flight Manual (AFM).

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were submitted in response to the proposal or the FAA's determination of the cost to the public.

Conclusion

The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Cost Impact

The FAA estimates that 7 airplanes of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per airplane to accomplish the required AFM revision, and that the average labor rate is $60 per work hour. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be $420, or $60 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) Is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

2000–21–13 Dornier Luftfahrt GMBH: Amendment 39–11945. Docket 99–NM–364–AD.

Applicability: All Model 328–300 series airplanes, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent an undetected dragging parking brake, and consequent decreased acceleration during the takeoff roll, increased takeoff distance, and possible runway overrun, accomplish the following:

Airplane Flight Manual (AFM) Revision

(a) Within 10 days after the effective date of this AD: Revise the Limitations Section of the FAA-approved Airplane Flight Manual by inserting a copy of Dornier 328J All Operators Telefax AOT–328J–32–001, dated September 9, 1999.

Alternative Methods of Compliance

(b) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, International Branch, ANM–116, FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Operations Inspector, who may add comments and then send it to the Manager, International Branch, ANM–116.

Note 1: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the International Branch, ANM–116.

Special Flight Permits

(c) Special flight permits may be issued in accordance with §§ sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(d) The AFM revision shall be done in accordance with Dornier 328J All Operators Telefax AOT–328J–32–001, dated September 9, 1999. This incorporation by reference was approved by the Director of the **Federal Register** in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from FAIRCHILD DORNIER, DORNIER Luftfahrt GmbH, P.O. Box 1103, D–82230 Wessling, Germany. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Note 2: The subject of this AD is addressed in German airworthiness directive 1999–352, dated November 18, 1999.

Effective Date

(e) This amendment becomes effective on November 29, 2000.

Issued in Renton, Washington, on October 17, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–27121 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 99–NM–345–AD; Amendment 39–11943; AD 2000–21–11]

RIN 2120–AA64

Airworthiness Directives; Raytheon Model BH.125, DH.125, and HS.125 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Raytheon Model DH.125–1A, –3A, and –400A series airplanes, that currently requires a one-time inspection to detect scoring of the upper fuselage skin around the periphery of the cockpit canopy blister interface, and repair, if necessary. This amendment expands the applicability of the existing AD to include additional airplanes, and requires that the actions be accomplished in accordance with revised service information for the newly added airplanes. This amendment is prompted by additional reports indicating that scoring has been detected on the upper fuselage skin around the periphery of the cockpit canopy blister interface. The actions specified by this AD are intended to detect and correct scoring of the upper fuselage skin around the periphery of the cockpit canopy blister interface, which could result in reduced structural integrity of the fuselage, and consequent cabin depressurization.

DATES: Effective November 29, 2000.

The incorporation by reference of Raytheon Aircraft Service Bulletin SB 53–93, Revision 2, dated April 2000, as listed in the regulations, is approved by the Director of the Federal Register as of November 29, 2000.

The incorporation by reference of Raytheon Aircraft Service Bulletin SB 53–93, dated May 16, 1996, as listed in the regulations, was approved previously by the Director of the Federal Register as of June 6, 1997 (62 FR 24013, May 2, 1997).

ADDRESSES: The service information referenced in this AD may be obtained from Raytheon Aircraft Company, Commercial Service Department, P.O. Box 85, Wichita, Kansas 67201–0085. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: T.N. Baktha, Aerospace Engineer, Airframe Branch, ACE–118W, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; telephone (316) 946–4155; fax (316) 946–4407.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 97–09–12, amendment 39–10008 (62 FR 24013, May 2, 1997), which is applicable to all Raytheon Model DH.125–1A, –3A, and –400A series airplanes, was published in the **Federal Register** on June 16, 2000 (65 FR 37723). The action proposed to continue to require a one-time inspection to detect scoring of the upper fuselage skin around the periphery of the cockpit canopy blister interface, and repair, if necessary. The action also proposed to expand the applicability of the existing AD to include additional airplanes and to require that the actions be accomplished in accordance with revised service information for the newly added airplanes.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were submitted in response to the proposal or the FAA's determination of the cost to the public.

Conclusion

The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Cost Impact

There are approximately 290 airplanes of the affected design in the worldwide fleet. The FAA estimates that 200 airplanes of U.S. registry will be affected by this AD.

The actions that are currently required by AD 97–09–12 and retained in this AD take approximately 4 work hours per airplane to accomplish, at an average labor rate of $60 per work hour. Based on these figures, the cost impact of the currently required actions on U.S. operators is estimated to be $48,000, or $240 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing amendment 39–10008 (62 FR 24013, May 2, 1997), and by adding a new airworthiness directive (AD), amendment 39–11943, to read as follows:

2000–21–11 Raytheon Aircraft Company: Amendment 39–11943. Docket 99–NM–345–AD. Supersedes AD 97–09–12, Amendment 39–10008.

Applicability: Model DH.125, BH.125, and HS.125 series airplanes, as listed in Raytheon Aircraft Service Bulletin SB 53–93, Revision 2, dated April 2000; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To detect and correct scoring of the upper fuselage skin around the periphery of the cockpit canopy blister interface, which could result in reduced structural integrity of the fuselage skin, and consequent cabin depressurization; accomplish the following:

Restatement of the Requirements of AD 97–09–12:

(a) For Model DH.125–1A, –3A, and –400A series airplanes, as identified in Raytheon Aircraft Service Bulletin SB 53–93, dated May 16, 1996: Within 90 days after June 6, 1997 (the effective date of AD 97–09–12, amendment 39–10008), perform a one-time detailed visual inspection to detect scoring of the upper fuselage skin around the periphery of the cockpit canopy blister interface, in accordance with the service bulletin.

(b) If no scoring is detected during the inspection required by paragraph (a) of this AD, no further action is required by this AD.

(c) If any scoring is detected during the inspection required by paragraph (a) of this AD, prior to further flight, determine the maximum location and details of each score, including the edge distance and material thickness, in accordance with Raytheon Aircraft Service Bulletin SB 53–93, dated May 16, 1996.

(1) If any scoring is found that is within the limits specified in the service bulletin, prior to further flight, repair in accordance with the service bulletin.

(2) If any scoring is found that is outside the limits specified in the service bulletin, prior to further flight, repair in accordance with a method approved by the Manager, Wichita Aircraft Certification Office (ACO), FAA.

New Requirements of this AD:

(d) For airplanes identified in Raytheon Aircraft Service Bulletin SB 53–93, Revision 2, dated April 2000, and not previously identified in paragraph (a) of this AD: Within 90 days after the effective date of this AD, perform a one-time detailed visual inspection to detect scoring of the upper fuselage skin around the periphery of the cockpit canopy blister interface, in accordance with Raytheon Aircraft Service Bulletin SB 53–93, Revision 2, dated April 2000.

(1) If no scoring is detected during the inspection required by paragraph (d) of this AD, no further action is required by this AD.

(2) If any scoring is detected during the inspection required by paragraph (d) of this AD, prior to further flight, determine the location and details of each score, including the edge distance and material thickness, in accordance with the service bulletin.

(i) If any scoring is found that is within the limits specified in the service bulletin, prior to further flight, repair in accordance with the service bulletin.

(ii) If any scoring is found that is outside the limits specified in the service bulletin, prior to further flight, repair in accordance with a method approved by the Manager, Wichita ACO.

Note 2: Any inspections and repairs accomplished prior to the effective date in accordance with Raytheon Service Bulletin SB 53–93, Revision 1, dated April 1999, are considered acceptable for compliance for the applicable actions required by this AD.

Alternative Methods of Compliance

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Wichita ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Wichita ACO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Wichita ACO.

Special Flight Permits

(f) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(g) Except as provided by paragraphs (c)(2) and (d)(2)(ii) of this AD, the actions shall be done in accordance with Raytheon Aircraft Service Bulletin SB 53–93, dated May 16, 1996; and Raytheon Aircraft Service Bulletin SB 53–93, Revision 2, dated April 2000; as applicable.

(1) The incorporation by reference of Raytheon Aircraft Service Bulletin SB 53–93, Revision 2, dated April 2000, is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Raytheon Aircraft Service Bulletin SB 53–93, dated May 16, 1996, was approved previously by the Director of the Federal Register as of June 6, 1997 (62 FR 24013, May 2, 1997).

(3) Copies may be obtained from Raytheon Aircraft Company, Commercial Service Department, P.O. Box 85, Wichita, Kansas 67201–0085. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(h) This amendment becomes effective on November 29, 2000.

Issued in Renton, Washington, on October 17, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–27120 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NE–47–AD; Amendment 39–11947; AD 2000–22–01]

RIN 2120–AA64

Airworthiness Directives; Pratt & Whitney PW4000 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to certain Pratt & Whitney (PW) PW4000 series turbofan engines that are equipped with the high pressure compressor (HPC) cutback stator (CBS) configuration and that are used on Boeing 747, Boeing 767, and McDonnell Douglas MD–11 series airplanes. This action requires Operators to limit the number of engines with the HPC CBS configuration to one per airplane, and prohibits installation of engines with HPC modules modified after the effective date of this AD to incorporate the HPC CBS configuration. This amendment is prompted by reports of HPC surges in engines that have the HPC CBS configuration. The actions specified in this AD are intended to prevent a multiple-engine power loss due to HPC surges, which could result in engine power loss at a critical phase of flight such as takeoff or climb.

DATES: Effective November 9, 2000.

Comments for inclusion in the Rules Docket must be received on or before December 26, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000–NE–47–AD, 12 New England Executive Park, Burlington, MA 01803–5299. Comments may also be sent via the Internet using the following address: ''9-ane-adcomment@faa.gov.'' Comments sent via the Internet must contain the docket number in the subject line.

The docket file for this AD may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT: Peter White, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803–5299; telephone (781) 238–7128, fax (781) 238–7199.

SUPPLEMENTARY INFORMATION: The FAA has been informed of nine surge events on PW4000 series engines that incorporate the HPC CBS configuration and that are used on Boeing 747, Boeing 767, and McDonnell Douglas MD–11 series airplanes. The surges were as follows:

- two occurred during takeoff,
- two occurred during climb,
- four occurred during ground testing,
- one occurred in a test cell shortly after selecting takeoff power.

The FAA issued AD 99–17–16, Amendment 39–11263 on August 12, 1999 (64 FR 45426, August 20, 1999). That AD requires short-term criteria for limiting the number of engines with potentially reduced stability on each airplane to no more than one engine, requires initial and repetitive on-wing or test cell cold-engine HPC stability tests, requires removal of engines from service that fail on-wing test acceptance criteria, and allows a follow-on test cell stability test. AD 99–17–16 also establishes required intervals for stability testing of the remaining engine with potentially reduced stability on the airplane and requirements for reporting test data. That amendment was prompted by a report of a dual-engine HPC surge event and reports of single-engine HPC surge events during the takeoff and climb phases of flight.

Subsequent to that AD, PW introduced a new design and full authority digital electronic control (FADEC) logic changes to address the problem of HPC rear stage surges. After the two latest surge events that occurred during takeoff, PW's preliminary analysis indicates that these events originated in the front stages of the HPC. A Weibull analysis conducted by PW revealed that the takeoff surge rate on engines with the HPC CBS configuration is about 11 times higher than the historical takeoff surge of the HPC non-CBS configuration. This condition, if not corrected, could result in a multiple-engine power loss due to HPC surges, which could result in engine power loss at a critical phase of flight such as takeoff or climb. The investigation is on-going and we may take further rulemaking action. We have coordinated with the Transport Airplane Directorate, the office responsible for certificating the airplanes on which the engines are installed.

Applicability of AD 99–17–16 to HPC CBS Engines

The stability testing defined in AD 99–17–16 is ineffective in evaluating the stability of the HPC CBS configuration, because those tests assess rear stage HPC stability and not front stage HPC stability, which is limiting for the HPC CBS configuration engines. The FAA has issued alternative methods of compliance (AMOC's) to PW intended for use by all operators for certain HPC CBS configuration engines exempting them from the initial and repetitive testing requirements of AD 99–17–16. These AMOC's are not affected by this AD.

Requirements of This AD

Since an unsafe condition has been identified that is likely to exist or develop on other PW4000 series turbofan engines of the same type design, this AD is being issued to prevent a multiple-engine power loss due to HPC surges, which could result in engine power loss at a critical phase of flight, such as takeoff or climb. This AD requires limiting the number of engines with the HPC CBS configuration installed, and that are used on Boeing 747, Boeing 767, and McDonnell Douglas MD–11 series airplanes, to one on each airplane according to the cyclic limits specified in this AD. This AD also prohibits using engines with HPC modules that incorporated PW service bulletin (SB) PW4ENG 72–706, Revision No. 3, dated July 17, 2000, or earlier revision, or SB PW4ENG 72–711, dated June 13, 2000, after the effective date of this AD.

Immediate Adoption of This AD

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption **ADDRESSES.** All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket No. 2000–NE–47–AD.'' The postcard will be date stamped and returned to the commenter.

Regulatory Impact

This rule does not have federalism implications, as defined in Executive Order 13132, because it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, the FAA has not consulted with state authorities prior to publication of this rule.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a ''significant regulatory action'' under Executive Order 12866.

It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

2000–22–01 Pratt & Whitney: Amendment 39–11947. Docket 2000–NE–47–AD.

Applicability

This airworthiness directive (AD) is applicable to PW4050, PW4052, PW4056, PW4060, PW4060A, PW4060C, PW4062, PW4460, and PW4462 turbofan engines that have high pressure compressor (HPC) modules that have incorporated Pratt & Whitney (PW) cutback stator (CBS) configuration service bulletin (SB) PW4ENG 72–706, Revision 3, dated July 17, 2000, or earlier Revision, or SB PW4ENG 72–711, dated June 13, 2000. These engines are used on, but not limited to, Boeing 747, Boeing 767, and McDonnell Douglas MD–11 series airplanes. An HPC module that has incorporated PW SB PW4ENG 72–706, Revision 3, dated July 17, 2000, or earlier Revision, or PW4ENG 72–711, dated June 13, 2000, will have the letters ''CB'' after the HPC module serial number on the HPC module data plate.

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance

Compliance with this AD is required as indicated, unless already done.

To prevent a multiple-engine power loss due to HPC surges, which could result in engine power loss at a critical phase of flight such as takeoff or climb, do the following:

Number of Cycles Until Number of Engines Must Be Limited

(a) Limit the number of engines with the HPC CBS configuration to one on each airplane within 100 cycles-in-service (CIS) of the effective date of this AD, or before the cyclic limits defined in the table below, whichever occurs later:

Type of airplane	Comply by
(1) Two engine	Before 390 cycles-since-new (CSN) or cycles-since-HPC module overhaul (CSO).
(2) Three engine	Before 340 CSN or CSO.
(3) Four engine	Before 305 CSN or CSO.

Special Conditions for Installing More Than One HPC CBS Engine on An Airplane

(b) Two HPC CBS configuration engines may be used on an airplane only under the following conditions:

(1) One engine with an HPC CBS configuration has fewer than 25 CSN or CSO, and

(2) The remaining engine has fewer than 615 CSN or CSO, and

(3) The airplane is operated for fewer than 25 CIS in this configuration.

HPC Modules at HPC Module Overhaul

(c) Engines with HPC modules that have been modified to incorporate PW SB PW4ENG 72–706, Revision 3 dated July 17, 2000, or earlier Revision, or SB PW4ENG 72–711, dated June 13, 2000, after the effective date of this AD, are not eligible for installation on an airplane.

Definitions

(d) For the purposes of this AD, an HPC module overhaul is defined as whenever the HPC stage 12 through 15 blade tip clearances are restored to the clearances specified in the applicable fits and clearances section of the engine manual during the shop visit.

Alternative Methods of Compliance

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office (ECO). Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

Effective Date of This AD

(f) This amendment becomes effective on November 9, 2000.

Issued in Burlington, Massachusetts, on October 19, 2000.

Thomas A. Boudreau, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 00–27431 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NM–17–AD; Amendment 39–11944; AD 2000–21–12]

RIN 2120–AA64

Airworthiness Directives; Fokker Model F.28 Mark 0100 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to all Fokker Model F.28 Mark 0100 series airplanes, that requires replacement of the anti-skid control boxes with improved units. This action is necessary to prevent electromagnetic interference with the anti-skid control system, which could result in reduced brake pressure during low-speed taxiing, and consequent reduced controllability and performance of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective November 29, 2000.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of November 29, 2000.

ADDRESSES: The service information referenced in this AD may be obtained from Fokker Services B.V., P.O. Box 231, 2150 AE Nieuw-Vennep, the Netherlands. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Norman B. Martenson, Manager, International Branch, ANM–116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–2110; fax (425) 227–1149.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to all Model F.28 Mark 0100 series airplanes, was published in the **Federal Register** on July 26, 2000 (65 FR 45936). That action proposed to require replacement of the anti-skid control boxes with improved units.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were submitted in response to the proposal or the FAA's determination of the cost to the public.

Conclusion

The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Cost Impact

The FAA estimates that 129 airplanes of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per airplane to accomplish the required actions, and that the average labor rate is $60 per work hour. Required parts will cost approximately $3,950 per airplane. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be $517,290, or $4,010 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

2000–21–12 Fokker Services B.V.: Amendment 39–11944. Docket 2000–NM–17–AD.

Applicability: All Model F.28 Mark 0100 airplanes, certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (b) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent electromagnetic interference with the anti-skid control system, which could result in reduced brake pressure during low-speed taxiing, and consequent reduced controllability and performance of the airplane, accomplish the following:

Replacement

(a) Within 36 months after the effective date of this AD, replace any anti-skid control box having part number (P/N) 6004272–3, –4, or –5 with an improved anti-skid control box having P/N 6004272–6, in accordance with Fokker Service Bulletin SBF100–32–117, dated September 27, 1999.

Alternative Methods of Compliance

(b) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, International Branch, ANM–116, FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, International Branch, ANM–116.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the InternationalBranch, ANM–116.

Special Flight Permits

(c) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(d) The actions shall be done in accordance with Fokker Service Bulletin SBF100–32–117, dated September 27, 1999. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Fokker Services B.V., P.O. Box 231, 2150 AE Nieuw-Vennep, the Netherlands. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Note 3: The subject of this AD is addressed in Dutch airworthiness directive 1999–127, dated October 29, 1999.

Effective Date

(e) This amendment becomes effective on November 29, 2000.

Issued in Renton, Washington, on October 17, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–27122 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 00–ACE–25]

Establishment of Class D and Class E Airspace, and Amendment to Class E Airspace; Garden City, KS

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action establishes a Class D airspace area, a Class E surface area extension and amends the Class E surface area from full time to part time status at Garden City Regional Airport, Garden City, KS. An Airport Traffic Control Tower (ATCT) is being established at Garden City Regional Airport and surface areas are necessary to provide controlled airspace for the safe and efficient operation of aircraft operating into and out of the Garden City Regional Airport. This action establishes controlled surface areas at Garden City Regional Airport. The effect of this rule is to provide a Class D airspace area, a Class E surface area extension, and amend the Class E surface area from full time to part time status.

EFFECTIVE DATE: 0901 UTC, November 30, 2000.

FOR FURTHER INFORMATION CONTACT: Kathy Randolph, Air Traffic Division, Airspace Branch, ACE–520c, DOT Regional Headquarters Building, Federal Aviation Administration, 901 Locust, Kansas City, MO 64106; telephone (816) 329–2525.

SUPPLEMENTARY INFORMATION:

History

On August 9, 2000, the FAA proposed to amend Part 71 of Title 14 of the Federal Regulations (14 CFR part 71) by establishing a Class D airspace area, a Class E surface area extension and amends the Class E surface area from full time to part time status at Garden City, KS (65 FR 48651). The proposed action was to provide controlled airspace for the safe and efficient operation of aircraft operating into and out of the Garden City Regional Airport.

Interested parties were invited to participate in this rulemaking proceeding by submitting written comments on the proposal to the FAA. No comments objecting to the proposal were received. Class D airspace areas designated for an airport that contain at least one primary airport around which the airspace is designated are published in paragraph 5000, Class E airspace areas designated as a surface area for an airport are published in paragraph 6002, and Class E airspace areas designated as an extension to Class D airspace areas are published in paragraph 6004 of FAA Order 7400.9H, dated September 1, 2000, and effective September 16, 2000, which is incorporated by reference in 14 CFR 71.1. The airspace designation listed in this document will be published subsequently in the Order.

The Rule

This amendment to part 71 of Title 14 of the Federal Regulations (14 CFR part 71) establishes a Class D airspace area, a Class E surface area extension and amends the Class E surface area from full time to part time status at Garden City Regional Airport, Garden City, KS. An ATCT is being established at Garden City Regional Airport and Class D and Class E surface areas are necessary for the safe and efficient operation of aircraft in the vicinity of the airport. The area will be depicted on appropriate aeronautical charts.

The FAA has determined that this regulation only involves an established body of technical regulation for which frequent and routine amendments are necessary to keep them operationally current. Therefore, this regulation (1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a Regulatory Evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Aviation, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, CLASS B, CLASS C, CLASS D, AND CLASS E AIRSPACE AREAS; AIRWAYS; ROUTES; AND REPORTING POINTS

1. The authority citation for part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 289.

§ 71.1 [Amended]

2. The incorporation by reference in 14 CFR 71.1 of Federal Aviation Administration Order 7400.9H, Airspace Designations and Reporting Points, dated September 1, 2000, and effective September 16, 2000, is amended as follows:

Paragraph 5000 Class D airspace area designated for an airport that contains at least one primary airport around which the airspace is designated.

* * * * *

ACE KS D Garden City, KS [New]

Garden City Regional Airport, KS
(lat 37°55′39″N., long. 100°43′28″W.)
Garden City VORTAC
(lat 37°55′09″N., long. 100°43′30″W.)

That airspace extending upward from the surface to and including 5400 feet MSL within a 4.3-mile radius of the Garden City Regional Airport. This Class D airspace area is effective during the specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory.

* * * * *

Paragraph 6002 Class E airspace designated as a surface area for an airport.

* * * * *

ACE KS E2 Garden City, KS [Revised]

Garden City Regional Airport, KS
(lat 37°55′39″N., long. 100°43′28″W.)
Garden City VORTAC
(lat 37°55′09″N., long. 100°43′30″W.)

That airspace within a 4.3-mile radius of the Garden City Regional Airport and within 2.2 miles each side of the Garden City VORTAC 004° radial extending from the 4.3-mile radius of the Garden City Regional Airport to 7 miles north of the VORTAC and within 2.2 miles each side of the Garden City VORTAC 171° radial extending from the 4.3-mile radius of the Garden City Regional Airport to 5 miles south of the VORTAC. This Class E airspace area is effective during the specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory.

* * * * *

Paragraph 6004 Class E airspace areas designated as an extension to a Class D airspace area.

* * * * *

ACE KS E4 Garden City, KS [New]

Garden City Regional Airport, KS
(lat 37°55′39″N., long. 100°43′28″W.)
Garden City VORTAC
(lat 37°55′09″N., long. 100°43′30″W.)

That airspace extending upward within 2.2 miles each side of the Garden City VORTAC 004° radial extending from 4.3-mile radius of the Garden City Regional Airport to 7 miles north of the VORTAC and within 2.2 miles each side of the Garden City VORTAC 171° radial extending from the 4.3-mile radius of the Garden City Regional Airport to 5 miles south of the VORTAC. This Class E airspace area is effective during the specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Director.

* * * * *

Issued in Kansas City, MO, on October 6, 2000.

Richard L. Day,

Acting Manager, Air Traffic Division, Central Region.

[FR Doc. 00–26953 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 00–AAL–6]

Revision of Class E Airspace; Wainwright, AK

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action revises Class E airspace at Wainwright, AK. The revision of instrument approach procedures to runway (RWY) 4 and RWY 22 at Wainwright Airport, Wainwright, AK, made this action necessary. This rule provides adequate controlled airspace for aircraft flying IFR procedures at Wainwright, AK.

EFFECTIVE DATE: 0901 UTC, January 25, 2001.

FOR FURTHER INFORMATION CONTACT: Bob Durand, Operations Branch, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587; telephone number (907) 271–5898; fax: (907) 271–2850; email: Bob.Durand@faa.gov. Internet address: http://www.alaska.faa.gov/at.

SUPPLEMENTARY INFORMATION:

History

On July 5, 2000, a proposal to amend part 71 of the Federal Aviation Regulations (14 CFR part 71) to revise the Class E airspace at Wainwright, AK, was published in the **Federal Register** (65 FR 41387). The proposal was necessary due to revisions to the instrument approaches to runway (RWY) 04 and RWY 22 at Wainwright Airport, Wainwright, AK.

Interested parties were invited to participate in this rulemaking proceeding by submitting written comments on the proposal to the FAA. No public comments to the proposal were received, thus, the rule is adopted as written.

The area will be depicted on aeronautical charts for pilot reference. The coordinates for this airspace docket are based on North American Datum 83. The Class E airspace areas extending upward from 700 feet or more above the surface of the earth are published in paragraph 6005 of FAA Order 7400.9H, *Airspace Designations and Reporting Points,* dated September 1, 2000, and effective September 16, 2000, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document will be revised and published subsequently in the Order.

The Rule

This amendment to 14 CFR part 71 revises the Class E airspace at Wainwright, AK, through the revisions of instrument approaches to the Wainwright Airport, Wainwright, AK. The area will be depicted on aeronautical charts for pilot reference. The intended effect of this rule is to provide adequate controlled airspace for IFR operations at Wainwright Airport, Wainwright, AK.

The FAA has determined that these regulations only involve an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, CLASS B, CLASS C, CLASS D, AND CLASS E AIRSPACE AREAS; AIRWAYS; ROUTES; AND REPORTING POINTS

1. The authority citation for 14 CFR part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

2. The incorporation by reference in 14 CFR 71.1 of Federal Aviation Administration Order 7400.9H, *Airspace Designations and Reporting Points,* dated September 1, 2000, and effective September 16, 2000, is amended as follows:

Paragraph 6005 Class E airspace areas extending upward from 700 feet or more above the surface of the earth

* * * * *

AAL AK E5 Wainwright, AK [Revised]

Wainwright Airport, AK

(Lat. 70° 38′ 17″ N., long. 159° 59′ 41″ W.)

That airspace extending upward from 700 feet above the surface within a 8.5 mile radius of the Wainwright Airport; and that airspace extending upward from 1,200 feet above the surface from lat. 70°54′00″ N long. 159°00′00″ W, to lat. 70°38′00″ N long. 161°00′00″ W, to lat. 70°20′00″ N long. 161°00′00″ W, to lat. 70°30′00″ N long. 159°30′00″ W, to lat. 70°40′00″ N long. 159°00′00″ W, to the point of beginning.

* * * * *

Issued in Anchorage, AK, on October 6, 2000.

Joseph F. Woodford,

Acting Manager, Air Traffic Division, Alaskan Region.

[FR Doc. 00–26820 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF DEFENSE

Defense Contract Audit Agency

32 CFR Part 317

[DCAA Reg. 5410.10]

Privacy Act; Implementation

AGENCY: Defense Contract audit Agency, DOD.

ACTION: Final rule.

SUMMARY: The Defense Contract Audit Agency is revising its privacy Act program to provide implementation policies and procedures.

EFFECTIVE DATE: October 6, 2000.

FOR FURTHER INFORMATION CONTACT: Mr. Dave Henshall at (703) 767–1005.

SUPPLEMENTARY INFORMATION: The proposed rule was previously published on August 7, 2000, at 65 FR 48202. No comments were received, therefore, the rule is being adopted as final.

Executive Order 12866. It has been determined that this Privacy Act rule for the Department of Defense does not constitute significant regulatory action. Analysis of the rule indicates that it does not have an annual effect on the economy of $100 million or more; does not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; does not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations recipients thereof; does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in Executive order 12866.

Regulatory Flexibility Act. It has been determined that this Privacy Act rule for the Department of Defense does not have significant economic impact on a substantial number of small entities because it is concerned only with the administration of Privacy Act systems of records within the Department of Defense.

Paperwork Reduction Act. It has been determined that this Privacy Act rule for the Department of Defense imposes no information requirements beyond the Department of Defense and that the information collected within the Department of Defense is necessary and consistent with 5 U.S.C. 552a, known as the Privacy Act of 1974.

List of Subjects in 32 CFR Part 317

Privacy.

Accordingly, 32 CFR part 317 is revised as follows:

PART 317—DCAA PRIVACY ACT PROGRAM

Sec.

Authority: Pub. L. 93–579, 88 Stat. 1896 (5 U.S.C. 552a).

§ 317.1 Purpose

This part provides policies and procedures for the Defense Contract Audit Agency's implementation of the Privacy Act of 1974 (DCAA Regulation 5410.10,[1] as amended, (5 U.S.C. 552a); DoD 5400.11 and DoD 5400.11–R,[2] ''DoD Privacy Program'' (32 CFR part 310); and is intended to promote uniformity within DCAA.

§ 317.2 Applicability and scope.

(a) This part applies to all DCAA organizational elements and takes precedence over all regional regulatory issuances that supplement the DCAA Privacy Program.

(b) This part shall be made applicable by contract or other legally binding action to contractors whenever a DCAA contract provides for the operation of a system of records or portion of a system of records to accomplish an Agency function.

§ 317.3 Policy.

(a) It is DCAA policy that personnel will comply with the DCAA Privacy Program; the Privacy Act of 1974; and the DoD Privacy Program (32 CFR part 310). Strict adherence is necessary to ensure uniformity in the implementation of the DCAA Privacy Program and create conditions that will foster public trust. It is also Agency policy to safeguard personal information contained in any system of records maintained by DCAA organizational elements and to make that information available to the individual to whom it pertains to the maximum extent practicable.

(b) DCAA policy specifically requires that DCAA organizational elements:

(1) Collect, maintain, use, and disseminate personal information only when it is relevant and necessary to achieve a purpose required by statute or Executive Order.

(2) Collect personal information directly from the individuals to whom it pertains to the greatest extent practical.

(3) Inform individuals who are asked to supply personal information for inclusion in any system of records:

(i) The authority for the solicitation.

(ii) Whether furnishing the information is mandatory or voluntary.

(iii) The intended uses of the information.

(iv) The routine disclosures of the information that may be made outside of DoD.

(v) The effect on the individual of not providing all or any part of the requested information.

(4) Ensure that records used in making determinations about individuals and those containing personal information are accurate, relevant, timely, and complete for the purposes for which they are being maintained before making them available to any recipients outside of DoD, other than a Federal agency, unless the disclosure is made under DCAA Regulation 5410.8, DCAA Freedom of Information Act Program.[3]

(5) Keep no record that describes how individuals exercise their rights guaranteed by the First Amendment to the U.S. Constitution, unless expressly authorized by statute or by the individual to whom the records pertain or is pertinent to and within the scope of an authorized law enforcement activity.

(6) Notify individuals whenever records pertaining to them are made available under compulsory legal processes, if such process is a matter of public record.

(7) Establish safeguards to ensure the security of personal information and to protect this information from threats or hazards that might result in substantial harm, embarrassment, inconvenience, or unfairness to the individual.

(8) Establish rules of conduct for DCAA personnel involved in the design, development, operation, or maintenance of any system of records and train them in these rules of conduct.

(9) Assist individuals in determining what records pertaining to them are being collected, maintained, used, or disseminated.

(10) Permit individual access to the information pertaining to them maintained in any system of records, and to correct or amend that information, unless an exemption for the system has been properly established for an important public purpose.

(11) Provide, on request, an accounting of all disclosures of the information pertaining to them except when disclosures are made:

(i) To DoD personnel in the course of their official duties.

(ii) Under DCAA Regulation 5410.8, DCAA Freedom of Information Act Program.

(iii) To another agency or to an instrumentality of any governmental jurisdiction within or under control of the United States conducting law enforcement activities authorized by law.

(12) Advise individuals on their rights to appeal any refusal to grant access to or amend any record pertaining to them, and file a statement of disagreement with the record in the event amendment is refused.

[1] Copies may be obtained from http://www.deskbook.osd.mil.

[2] Copies may be obtained from http://web7.whs.osd.mil.

[3] Copies may be obtained from http://www.deskbook.osd.mil.

§ 317.4 Responsibilities.

(a) The Assistant Director, Resources has overall responsibility for the DCAA Privacy Act Program and will serve as the sole appellate authority for appeals to decisions of respective initial denial authorities.

(b) The Chief, Administrative Management Division under the direction of the Assistant Director, Resources, shall:

(1) Establish, issue, and update policies for the DCAA Privacy Act Program; monitor compliance with this part; and provide policy guidance for the DCAA Privacy Act Program.

(2) Resolve conflicts that may arise regarding implementation of DCAA Privacy Act policy.

(3) Designate an Agency Privacy Act Advisor, as a single point of contact, to coordinate on matters concerning Privacy Act policy.

(4) Make the initial determination to deny an individual's written Privacy Act request for access to or amendment of documents filed in Privacy Act systems of records. This authority cannot be delegated.

(c) The DCAA Privacy Act Advisor under the supervision of the Chief, Administrative Management Division shall:

(1) Manage the DCAA Privacy Act Program in accordance with this part and applicable DCAA policies, as well as DoD and Federal regulations.

(2) Provide guidelines for managing, administering, and implementing the DCAA Privacy Act Program.

(3) Implement and administer the Privacy Act program at the Headquarters.

(4) Ensure that the collection, maintenance, use, or dissemination of records of identifiable personal information is in a manner that assures that such action is for a necessary and lawful purpose; that the information is timely and accurate for its intended use; and that adequate safeguards are provided to prevent misuse of such information.

(5) Maintain and publish DCAA Pamphlet 5410.13, DCAA Compilation of Privacy Act System Notices.[4]

(6) Prepare promptly any required new, amended, or altered system notices for systems of records subject to the Privacy Act and submit them to the Defense Privacy Office for subsequent publication in the **Federal Register**.

(7) Prepare the annual Privacy Act Report as required by DoD 5400.11–5, DoD Privacy program.

(8) Conduct training on the Privacy Act program for Agency personnel.

(d) Heads of Principal Staff Elements are responsible for:

(1) Reviewing all regulations or other policy and guidance issuances for which they are the proponent to ensure consistency with the provisions of this part.

(2) Ensuring that the provisions of this part are followed in processing requests for records.

(3) Forwarding to the DCAA Privacy Act Advisor, any Privacy Act requests received directly from a member of the public, so that the request may be administratively controlled and processed.

(4) Ensuring the prompt review of all Privacy Act requests, and when required, coordinating those requests with other organizational elements.

(5) Providing recommendations to the DCAA Privacy Act Advisor regarding the releasability of DCAA records to members of the public, along with the responsive documents.

(6) Providing the appropriate documents, along with a written justification for any denial, in whole or in part, of a request for records to the DCAA Privacy Act Advisor. Those portions to be excised should be bracketed in red pencil, and the specific exemption or exemptions cites which provide the basis for denying the requested records.

(e) The General Counsel is responsible for:

(1) Ensuring uniformity is maintained in the legal position, and the interpretation of the Privacy Act; 32 CFR part 310; and this part.

(2) Consulting with DoD General Counsel on final denials that are inconsistent with decisions of other DoD components, involve issues not previously resolved, or raise new or significant legal issues of potential significance to other Government agencies.

(3) Providing advice and assistance to the Assistant Director, Resources; Regional Directors; and the Regional Privacy Act Officer, through the DCAA Privacy Act Advisor, as required, in the discharge of their responsibilities.

(4) Coordinating Privacy Act litigation with the Department of Justice.

(5) Coordinating on Headquarters denials of initial requests.

(f) Each Regional Director is responsible for the overall management of the Privacy Act program within their respective regions. Under his/her direction, the Regional Resources Manager is responsible for the management and staff supervision of the program and for designating a Regional Privacy Act Officer. Regional Directors will, as designee of the Director, make the initial determination to deny an individual's written Privacy Act request for access to or amendment of documents filed in Privacy Act systems of records. This authority cannot be delegated.

(g) Regional Privacy Act Officers will:

(1) Implement and administer the Privacy Act program throughout the region.

(2) Ensure that the collection, maintenance, use, or dissemination of records of identifiable personal information is in a DCAAR 5410.10 manner that assures that such action is for a necessary and lawful purpose; that the information is timely and accurate for its intended use; and that adequate safeguards are provided to prevent misuse of such information.

(3) Prepare input for the annual Privacy Act Report when requested by the DCAA Information and Privacy Advisor.

(4) Conduct training on the Privacy Act program for regional and FAO personnel.

(5) Provide recommendations to the Regional Director through the Regional Resources Manager regarding the releasability of DCAA records to members of the public.

(h) Managers, Field Audit Offices (FAOs) will:

(1) Ensure that the provisions of this part are followed in processing requests for records.

(2) Forward to the Regional Privacy Act Officer, any Privacy Act requests received directly from a member of the public, so that the request may be administratively controlled and processed.

(3) Ensure the prompt review of all Privacy Act requests, and when required, coordinating those requests with other organizational elements.

(4) Provide recommendation to the Regional Privacy Act Officer regarding the releasability of DCAA records to members of the public, along with the responsive documents.

(5) Provide the appropriate documents, along with a written justification for any denial, in whole or in part, of a request for records to the Regional Privacy Act Officer. Those portions to be excised should be bracketed in red pencil, and the specific exemption or exemptions cited which provide the basis for denying the requested records.

(i) DCAA Employees will:

[4] Copies may be obtained from the Defense Contract Audit Agency, ATTN: DCAA–CMO, 8725 John J. Kingman Road, Suite 2135, Fort Belvoir, VA 22060–6219. Electronic copies of DCAA Privacy notices may be obtained from http://www.defenselink. mil/privacy.

(1) Not disclose any personal information contained in any system of records, except as authorized by this part.

(2) Not maintain any official files which are retrieved by name or other personal identifier without first ensuring that a notice for the system has been published in the **Federal Register**.

(3) Report any disclosures of personal information from a system of records or the maintenance of any system of records that are not authorized by this part to the appropriate Privacy Act officials for their action.

§ 317.5 Information requirements.

The Report Control Symbol. Unless otherwise directed, any report concerning implementation of the Privacy Program shall be assigned Report Control Symbol DD–DA&M(A)1379.

§ 317.6 Procedures.

Procedures for processing material in accordance with the Privacy Act of 1974 are outlined in DoD 5400.11–R, DoD Privacy Program (32 CFR part 310).

Dated: October 19, 2000.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 00–27321 Filed 10–24–00; 8:45 am]

BILLING CODE 5001–10–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

45 CFR Part 310

RIN 0970–AB73

Comprehensive Tribal Child Support Enforcement Programs

AGENCY: Office of Child Support Enforcement, Administration for Children and Families, Department of Health and Human Services.

ACTION: Interim final rule; open consultations.

SUMMARY: Notice is hereby given for the dates, locations and hotel sites for the final two Tribal consultations on the interim final rule for funding of comprehensive Tribal child support enforcement (CSE) programs that are currently operating. An interim final rule that will implement direct child support enforcement program funding to Federally recognized Indian tribes and tribal organizations was published in the **Federal Register** on August 21, 2000 (65 FR 50786). In the interest of providing Tribes and Tribal organizations and the public adequate time to review and comment on the interim final rule, we modified the standard 60-day comment period by extending it to 120 days. The Federal Office of Child Support Enforcement is sponsoring a total of four consultations with federally recognized Indian Tribes, the general public, and Tribal organizations during the 120-day notice and comment period to receive public comment on the interim final rule. The notice for the first two consultations was published September 13, 2000 in the **Federal Register** (65 FR 55261). The initial consultation was held October 3–5, 2000 in Minneapolis, Minnesota and the second consultation will be held October 24–26, 2000 in Anchorage, Alaska. The notification provides specific information for the final two consultations.

DATES: The final two consultations will be held November 1–3, 2000 in Washington, DC and November 28–30, 2000 in Phoenix, Arizona. The consultations will begin promptly at 9 a.m. and end at 4:30 p.m. on the first two days. The final half-day session will begin promptly at 9 a.m. and end at 12 noon.

ADDRESSES: The third consultation, November 1–3, 2000, will be held at the Monarch Hotel, 2401 M Street, NW., Washington, DC 20037. The telephone number for reservations is (202) 429–2400. The fourth consultation, November 28–30, 2000, will be held at the Crowne Plaza Hotel, 100 North 1st Street, Phoenix, Arizona 85004. The telephone number for reservations is (602) 333–0000. All interested parties are invited to attend these public consultations. Seating may be limited and will be available on a first-come, first-serve basis. Persons needing special assistance, such as sign language interpretation or other special accommodation, should contact the Deputy Director of the Native American Child Support Enforcement Program, Office of Child Support Enforcement, at the address listed below.

FOR FURTHER INFORMATION CONTACT: Ms. Virginia Apodaca, Deputy Director, Native American Child Support Enforcement Program, Office of Child Support Enforcement, Fourth Floor East, 370 L'Enfant Promenade, SW., Washington, DC 20447 (telephone (202) 401–9376; fax (202) 401–5559; e-mail: vapodaca@acf.dhhs.gov). These are not toll-free numbers. It is expected that there will be only four consultations.

SUPPLEMENTARY INFORMATION: A separate notice of the proposed rulemaking open consultations for Tribal CSE programs is published concurrently with this document in this **Federal Register**. Please review that notice for additional information on the consultations including the purpose, public participation, the agenda, and the minutes.

Dated: October 18, 2000.

David Gray Ross,

Commissioner, Office of Child Support Enforcement.

[FR Doc. 00–27437 Filed 10–24–00; 8:45 am]

BILLING CODE 4184–01–M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[DA 00–2333; MM Docket No. 98–214; RM–9353, RM–9568]

Radio Broadcasting Services; Rantoul, Gilman, Illinois

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission, at the request of Saga Communications of Illinois, Inc., allots Channel 277A at Gilman, Illinois, as the community's first local aural transmission service. The request of petitioner, L. Topaz Enterprises, Inc., to allot Channel 277A to Rantoul, Illinois, as the community's third local FM service, is denied. *See* 63 FR 68719 (December 14, 1998). Channel 277A can be allotted to Gilman in compliance with the Commission's minimum distance separation requirements, with respect to domestic allotments, with a site restriction of 10 kilometers (6.2 miles) South, at coordinates 40–40–59 NL and 88–01–53 WL.

DATES: Effective November 27, 2000.

FOR FURTHER INFORMATION CONTACT: Victoria M. McCauley, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Report and Order, MM Docket No., adopted October 4, 2000, and released October 13, 2000. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 445 12th Street, SW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Services, Inc., (202) 857–3800, 1231 20th Street, NW, Washington, DC 20036.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of title 47 of the Code of Federal Regulations is amended as follows:

PART 73—[AMENDED]

1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334. 336.

§ 73.202 [AMENDED]

2. Section 73.202(b) the FM Table of Allotments under Illinois is amended by adding Gilman, Channel 277A.
Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 00–27419 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[DA No. 00–2326; MM Docket No. 99–134; RM–9543 & RM–9572]

Radio Broadcasting Services; Drummond & Victor, MT and McCall ID

AGENCY: Federal Communications Commission.

ACTION: Final rule; dismissal.

SUMMARY: This document denies a *Petition for Reconsideration* of the *Report and Order* in MM Docket No. 99–134 which allotted Channel 268C to Drummond, Montana and Channel 250C3 to Victor, Montana. *See* 65 FR 31101, May 16, 2000. Idaho Broadcasting Consortium (''Idaho'') filed a counterproposal requesting the substitution of Channel 294C1 for Channel 294C2 at McCall, Idaho and reallotment to Victor, Montana. The counterproposal was denied as Idaho was an applicant rather than a permittee or licensee at the time the counterproposal was filed and the counterproposal was not mutually exclusive with the proposal in this proceeding. The Commission's Rules sets forth limited provisions under which the Commission will reconsider a rule making action. The Petition for Reconsideration is denied as Idaho has failed to meet those requirements.

FOR FURTHER INFORMATION CONTACT: Kathleen Scheuerle, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Order in MM Docket No. 99–134, adopted October 4, 2000, and released October 13, 2000. The full text of this Commission decision is available for inspection and copying during normal business hours in the Commission's Reference Center, 445 Twelfth Street, SW, Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Services, Inc., 1231 20th Street, NW., Washington, DC 20036, (202) 857–3800, facsimile (202) 857–3805.

Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 00–27418 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[DA 00–2332; MM Docket No. 99–313; RM–9753]

Radio Broadcasting Services; Greenwood and Mauldin, SC

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission, at the request of Sutton Radiocasting Corporation, reallots Channel 244A from Greenwood to Mauldin, South Carolina, as the community's first local aural transmission service, and modifies Station WCRS–FM's license accordingly. *See* 64 FR 61239, November 10, 1999. Channel 244A can be reallotted to Mauldin in compliance with the Commission's minimum distance separation requirements with a site restriction of 10.7 kilometers (6.7 miles) south to avoid short-spacings to the licensed sites of Station WKKT(FM), Channel 245C, Statesville, North Carolina, and Station WNCC–FM, Channel 244A, Franklin, North Carolina. The coordinates for Channel 244A at Mauldin are 34–41–30 North Latitude and 82–17–02 West Longitude.

DATES: Effective November 27, 2000.

ADDRESSES: Federal Communications Commission, Washington, D.C. 20554.

FOR FURTHER INFORMATION CONTACT: Sharon P. McDonald, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Report and Order, MM Docket No. 99–313, adopted October 4, 2000, and released October 13, 2000. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Information Center (Room CY–A257), 445 12th Street, SW, Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, Inc., (202) 857–3800, 1231 20th Street, NW., Washington, DC 20036.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of title 47 of the Code of Federal Regulations is amended as follows:

PART 73—[AMENDED]

1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334, 336.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under South Carolina, is amended by adding Mauldin, Channel 244A; and removing Channel 244A at Greenwood.

Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 00–27417 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF DEFENSE

48 CFR Appendix F to Chapter 2

[DFARS Case 2000–D008]

Defense Federal Acquisition Regulation Supplement; Material Inspection and Receiving Report

AGENCY: Department of Defense (DoD).

ACTION: Final rule.

SUMMARY: The Director of Defense Procurement has issued a final rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) to update instructions for completion of the Material Inspection and Receiving Report. The rule adds requirements for inclusion of the title, mailing address, and telephone number of the Government official responsible for acceptance of supplies or services under a contract.

EFFECTIVE DATE: October 25, 2000.

FOR FURTHER INFORMATION CONTACT: Mr. Rick Layser, Defense Acquisition Regulations Council, OUSD(AT&L)DP(DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062. Telephone (703) 602–0293; telefax (703) 602–0350. Please cite DFARS Case 2000–D008.

SUPPLEMENTARY INFORMATION:

A. Background

Section 32.905(f)(6) of the Federal Acquisition Regulation (FAR) requires that receiving reports supporting invoice payments include the signature, printed name, title, mailing address, and telephone number of the Government official responsible for acceptance or approval functions. DD Form 250, Material Inspection and Receiving Report, has been revised to provide for inclusion of all information required by FAR 32.905(f)(6). This final rule amends the corresponding DD Form 250 preparation instructions in DFARS Appendix F. The rule also makes editorial changes to Appendix F to update and clarify the text.

DD Form 250 and other forms prescribed by the DFARS are not included in the Code of Federal Regulations. The forms are available via the Internet at http://www.acq.osd.mil/dp/dars/dfars/toc253_3.htm.

This rule was not subject to Office of Management and Budget review under Executive Order 12866, dated September 30, 1993.

B. Regulatory Flexibility Act

This final rule does not constitute a significant revision within the meaning of FAR 1.501 and Public Law 98–577 and publication for public comment is not required. However, DoD will consider comments from small entities concerning the affected DFARS subpart in accordance with 5 U.S.C. 610. Such comments should cite DFARS Case 2000–D008.

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the rule does not impose any new information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Chapter 2

Government procurement.

Michele P. Peterson,

Executive Editor, Defense Acquisition Regulations Council.

Therefore, 48 CFR Appendix F to Chapter 2 is amended as follows:

1. The authority citation for 48 CFR Appendix F to subchapter 1 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

Appendix F—Material Inspection and Receiving Report

F–104 [Amended]

2. Appendix F to Chapter 2 is amended in Part 1, Section F–104, in the undesignated paragraph following paragraph (a)(5)(i)(k) by removing ''Block 21B'' and adding in its place ''Block 21b''.

3. Appendix F to Chapter 2 is amended in Part 3, Section F–301, as follows:

a. By revising paragraphs (a) and (b)(1) and paragraph (b)(2)(i) introductory text;

b. In paragraph (b)(2)(i)(B)*(1)* introductory text in the second sentence by removing ''three position'' and adding in its place ''three-position'';

c. In paragraph (b)(2)(iii) introductory text in the last sentence by removing the colon and adding in its place an em dash;

d. In paragraph (b)(3) in the last sentence by adding, after the word ''date'', the parenthetical ''(see F–303'';

e. In paragraph (b)(21)(i) in the first sentence by removing ''Blocks A and B'' and adding in its place ''Blocks 21a and 21b'', and in the last sentence by removing ''cross reference'' and adding in its place ''cross-reference'';

f. In paragraph (b)(21)(iii) in the first sentence by removing ''Block 21A'' and adding in its place ''Block 21a'';

g. In paragraph (b)(21)(iv)(A) introductory text by removing ''shall'' and adding in its place ''must'';

h. By revising paragraphs (b)(21)(iv)(A)(*3*) and (b)(21)(v)(A);

i. In paragraph (b)(21)(v)(B) introductory text by removing ''shall'' and adding in its place ''must''; and

j. By revising paragraphs (b)(21)(v)(B)(*3*) and (b)(21)(v)(C), the last sentence of paragraph (b)(21)(v)(D), and paragraphs (b)(21)(v)(E) and (b)(22). The revised text reads as follows:

Appendix F—Material Inspection and Receiving Report

* * * * *

Part 3—Preparation of the DD Form 250 and DD Form 250C

F–301 Preparation Instructions

(a) *General.*

(1) Dates must use nine spaces consisting of the four digits of the year, three-position alphabetic month abbreviation, and two digits for the day. For example, 2000AUG07, 2000SEP24.

(2) Addresses must consist of the name, street address/P.O. box, city, state, and ZIP code.

(3) Enter to the right of and on the same line as the word ''Code'' in Blocks 9 through 12 and in Block 14—

(i) The Commercial and Government Entity Handbook (H4/H8) code;

(ii) The DoD activity address code (DoDAAC) as it appears in the DoD Activity Address Directory (DoDAAD), DoD 4000.25–6–M; or

(iii) The Military Assistance Program Address Directory (MAPAD) code.

(4) Enter the DoDAAC, CAGE (H4/H8), or MAPAD code in Block 13.

(5) The data entered in the blocks at the top of the DD Form 250c must be identical to the comparable entries in Blocks 1, 2, 3, and 6 of the DD Form 250.

(6) Enter overflow data from the DD Form 250 in Block 16 or in the body of the DD Form 250c with an appropriate cross-reference. Do not number or distribute additional DD Form 250c sheets, solely for continuation of Block 23 data as part of the MIRR.

(7) Do not include classified information in the MIRR. MIRRs must not be classified.

(b) *Completion instructions.*

(1) Block 1—Procurement Instrument Identification (Contract) No.

(i) Enter the 13-position alpha-numeric basic Procurement Instrument Identification Number (PIIN) of the contract. When applicable, enter the four-position alpha-numeric call/order serial number that is supplementary to the 13-position basic PIIN. This number is also referred to as the Supplementary Procurement Instrument Identification Number (SPIIN). Use SPIINs for (also see Subpart 204.70)—

(A) Delivery orders under indefinite-delivery type contracts;

(B) Orders under basic ordering agreements; and

(C) Calls under blanket purchase agreements.

(ii) Except as indicated in paragraph (b)(1)(iii) of this section, do not enter supplementary numbers used in conjunction with basic PIINs to identify—

(A) Modifications of contracts and agreements;

(B) Modifications to calls or orders; or

(C) Document numbers representing contracts written between contractors.

(iii) When shipping instructions are furnished and shipment is made before receipt of the confirming contract modification (SP 30, Amendment of Solicitation/Modification of Contract), enter the contract modification six-digit number or the two-digit call or order number immediately following the PIIN or call/order four-digit SPIIN.

(iv) For DoD delivery orders on non-DoD contracts, enter the non-DoD contract number immediately below the PII number.

1. PROCUREMENT INSTRUMENT IDENTIFICATION (CONTRACT) NO.	ORDER NO.
SP0400–00–F–1684 GS–000S–61917	

(v) When a contract number other than PII number is used, enter that contract number.

(2) * * *

(i) The shipment number has a three-position alpha character prefix and a four-position numeric or alpha-numeric serial number.

* * * * *

(21) * * *

(iv) * * *

(A) * * *

(*3*) Enter the typed, stamped, or printed name, title, mailing address, and commercial telephone number.

* * * * *

(v) * * *

(A) When acceptance at origin is indicated in Block 21a, make no entries in Block 21b.

(B) * * *

(*3*) Enter typed, stamped, or printed name, title, mailing address, and commercial telephone number.

(C) When ''ALTERNATIVE RELEASE PROCEDURE'' is entered in Block 21a and acceptance is at destination, the authorized Government representative must complete the entries required by paragraph (b)(21)(v)(B) of this section.

(D) * * * Forward one executed copy of the final DD Form 250 to the contract administration office cited in Block 10 for implementing contract closeout procedures.

(E) When ''FAST PAY'' is entered in Block 21a, make no entries in this block.

(22) Block 22—Receiver's Use. The authorized representative of the receiving activity (Government or contractor) must use this block to show receipt, quantity, and condition. The authorized representative must—

(i) Enter the date the supplies arrived. For example, when off-loading or in-checking occurs subsequent to the day of arrival of the carrier at the installation, the date of the carrier's arrival is the date received for purposes of this block;

(ii) Sign; and

(iii) Enter typed, stamped, or printed name, title, mailing address, and commercial telephone number.

* * * * *

F–308 [Amended]

4. Appendix F to Chapter 2 is amended in Part 3, Section F–308, in the last sentence, by removing ''Block 21B'' and adding in its place ''F–301(b)(21)(v)''.

F–401 [Amended]

5. Appendix F to Chapter 2 is amended in Part 4, Section F–401, in paragraph (d)(1), by removing ''(Block 21A)'' and adding in its place ''(Block 21a)''.

[FR Doc. 00–27246 Filed 10–24–00; 8:45 am]
BILLING CODE 5000–04–M

DEPARTMENT OF DEFENSE

48 CFR Parts 204, 207, 209, 219, 236, 242, and 252, and Appendices E, F, and G to Chapter 2

Defense Federal Acquisition Regulation Supplement; Technical Amendments

AGENCY: Department of Defense (DoD).

ACTION: Final rule.

SUMMARY: The Director of Defense Procurement is making technical amendments to the Defense Federal Acquisition Regulation Supplement to update titles, references, paragraph numbers, and activity names, addresses, and telephone numbers.

EFFECTIVE DATE: October 25, 2000.

FOR FURTHER INFORMATION CONTACT: Ms. Michele Peterson, Defense Acquisition Regulations Council, OUSD (AT&L) DP (DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062. Telephone (703) 602–0311; telefax (703) 602–0350.

List of Subjects in 48 CFR Parts 204, 207, 209, 219, 236, 242, and 252

Government procurement.

Michele P. Peterson,
Executive Editor, Defense Acquisition Regulations Council.

Therefore, 48 CFR Parts 204, 207, 209, 219, 236, 242, and 252, and Appendices E, F, and G to Chapter 2 are amended as follows:

1. The authority citation for 48 CFR Parts 204, 207, 209, 219, 236, 242, and 252, and Appendices, E, F, and G to subchapter I continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

PART 204—ADMINISTRATIVE MATTERS

2. Section 204.7202–1 is amended by revising paragraph (c) to read as follows:

204.7202–1 CAGE codes.

* * * * *

(c) Direct questions on obtaining computer tapes, electronic updates, or code assignments to DLIS Customer Service: toll-free (888) 227–2423 or (888) 352–9333; DSN 932–4725; or commercial (616) 961–4725.

3. Section 204.7204 is amended in paragraph (b) by revising the last two sentences to read as follows:

204.7204 Maintenance of the CAGE file.

* * * * *

(b) * * * Telephone Numbers: toll-free (888) 352–9333, DSN 932–4725, commercial (616) 961–4725. Facsimile: (616) 961–4388, 4485.

* * * * *

PART 207—ACQUISITION PLANNING

207.105 [Amended]

4. Section 207.105 is amended in paragraph (b)(13)(iv) in the last sentence by removing ''DoD 4120.3–M'' and adding in its place ''DoD 4120.24–M''

PART 209—CONTRACTOR QUALIFICATIONS

209.202 [Amended]

5. Section 209.202 is amended in paragraph (a)(1) in the first sentence as follows:

a. By removing ''which'' and adding in its place ''that'';

b. By removing ''DoD Manual 4120.3–M'' and adding in it place ''DoD 4120.24–M'' and

c. By adding ''(DSP)'' after ''Program''.

PART 219—SMALL BUSINESS PROGRAMS

219.202–5 [Amended]

6. Section 219.202–5 is amended in the introductory text by removing ''Item D4E'' and adding in its place ''Item D4C''.

PART 236—CONSTRUCTION AND ARCHITECT-ENGINEER CONTRACTS

7. Section 236.570 is amended by revising paragraph (a)(2) to read as follows:

236.570 Additional provisions and clauses.

(a) * * *

(2) 252.236–7001, Contract Drawings and Specifications.

* * * * *

8. Section 236.701 is amended by revising paragraph (c) to read as follows:

236.701 Standard and optional forms for use in contracting for construction or dismantling, demolition, or removal of improvements.

(c) Do not use Optional Form 347, Order for Supplies or Services (see 213.307).

PART 242—CONTRACT ADMINISTRATION AND AUDIT SERVICES

242.002 [Amended]

9. Section 242.002 is amended in paragraph (S–70) (iii) introductory test in the first sentence by adding ''Business'' after ''Federal''.

242.1203 [Amended]

10. Section 242.1203 is amended as follows:

a. By redesignating paragraphs (b)(2)(A), (B), and (C) as paragraphs (b)(2)(B), (C), and (D), respectively;

b. By redesignating paragraph (b)(1) as paragraph (b)(2)(A);

c. In newly designated paragraph (b)(2)(A), in the entry ''National Aeronautics and Space Administration'', by removing ''Assistant'' and adding in its place ''Associate''; by removing ''HP'' and adding in its place ''HS''; and by removing ''20546'' and adding in its place ''20546–0001'';

d. In newly designated paragraph (b)(2)(D) by removing the reference ''(b)(1)'' and adding in its place ''(b)(2)(A)'';

e. By redesignating paragraphs (d), (e), and (f) as paragraphs (f), (g), and (h), respectively;

f. In newly designated paragraph (f)(i) in the first sentence by removing the references ''42.1204(e)'' and ''(b)(1)'' and adding in their place ''42.1204(i)'' and ''(b)(2)(A)'', respectively;

g. In new designated paragraph (g)(i) by removing the reference ''(b)(1)'' and adding in its place ''(b)(2)(A)'';

h. In newly designated paragraph (h)(4)(A) in the first sentence by removing the reference ''(b)(1)'' and adding in its place ''(b)(2)(A)''; and

i. In newly designated paragraph (h)(4)(B) in the first sentence by removing ''paragraph (e)(ii)'' and adding in its place ''paragraph (g)(ii) of this section''.

242.1204 [Amended]

11. Section 242.1204 is amended as follows:

a. By redesignating paragraph (e) as paragraph (i); and

b. In the introductory text of newly designated paragraph (i) by removing the reference ''42.1204(e)'' and adding in its place ''42.1204(i)''.

PART 252—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

252.247–7015 [Amended]

12. Section 252.247–7015 is amended in the introductory text by removing ''216.505(d)'' and adding in its place ''216.506(d)''.

* * * * *

13. Appendix E to Chapter 2 is amended by revising Exhibit II to read as follows:

Appendix E—DOD Spare Parts Breakout Program

Exhibit II—Full Screening Decision Process Summary Flow Chart

Note: Copies of Exhibit II can be obtained from: Defense Acquisition Regulations System, OUSD (AT&L), 3062 Defense Pentagon, Washington, DC 20301–3062; datafax (703) 602–0350.

14. Appendix F to Chapter 2 is amended in Part 4, Section F–401, by revising Material Inspection and Receiving Report, Table 2—Special Distribution, to read as follows:

Appendix F—Material Inspection and Receiving Report

* * * * *

F–401 Distribution

* * * * *

Material Inspection and Receiving Report

TABLE 2.—SPECIAL DISTRIBUTION

As required	Address	Number of copies
Each: Navy Status Control Activity, Army, Air Force, DLA Inventory Control Manager.	Address specified in contract	1 Each addressee.
Quality Assurance Representative	Address specified by the assigned quality assurance representative.	1
Transportation Office issuing GBL (attach to GBL memorandum copy).	CAO address otherwise specified in the contract	1
Purchasing Office other than office issuing contract	Address specified in the contract	1
Foreign Military Sales Representative	Address specified in the contract	8
Military Assistance Advisory Group (Grant Aid shipments)	U.S. Military Advisory Group, Military Attache, Mission, or other designated agency address as specified in the contract.	1
Army Foreign Military Sales	Commander, U.S. Army Security Assistance Command, ATTN: AMSAC–OL, 54 ''M'' Avenue, Suite 1, New Cumberland, PA 17070–5096.	1
Air Force: On shipments of new production of aircraft and missiles, class 1410 missiles, 1510 aircraft (fixed wing, all types), 1520 aircraft (rotary wing), 1540 gliders, 1550 target drones.	HQ Air Force Materiel Command, LGX–AVDO, Area A, Building 262, Room N142, 4375 Chidlaw Road, Wright-Patterson AFB, OH 45433–5006.	1
When above items are delivered to aircraft modification centers	DCMA	1
Foreign Military Sales/Military Assistance Program (Grant Aid) shipments to Canada.	National Defense Headquarters, Ottawa, Ontario, Canada, K1A OK4, ATTN: DPSUPS3.	1
Other than Canada	Address in the contract	1
When consignee is an Air National Guard Activity	Consignee address (Block 13), ATTN: Property Officer	3
Navy: Navy Foreign Military Sales	Naval Inventory Control Point, Deputy Commander for International Programs (NAVICP Code P761), 700 Robbins Avenue, Philadelphia, PA 19111–5095.	2
When typed code (TC) 2T or 7T is shown in Block 16, or when shipment is consigned to another contractor's plant for a Government representative or when Block 16 indicates shipment includes GFP.	Naval Inventory Control Point (Code 0142) for aviation type material, 700 Robbins Avenue, Philadelphia, PA 19111–5098, and	2
	Naval Inventory Control Point (Code 0143) for all other material, 5450 Carlisle Pike, PO Box 2020, Mechanicsburg, PA 17055–0788.	2
Bulk Petroleum Shipments	Cognizant Defense Fuel Region (see Table 4)	1

15. Appendix G to Chapter 2 is amended in part 1, Section G–101, paragraph (c), by revising the text under the NAVY* and MARINE CORPS* headings and the last sentence to read as follows:

Appendix G—Activity Address Numbers

* * * * *

G–101 Assignment and use of a number.

* * * * *

(c) * * *

NAVY*

Defense Finance and Accounting Service, Cleveland (Code AADB), 1240 East Ninth Street, Cleveland, OH 44199–4000

MARINE CORPS*

Headquarters, U.S. Marine Corps, 2 Navy Annex, Room 2135, Washington, DC 20380–1775

* * * * *

* The Navy and Marine Corps Activity Address Monitor for assignment of two-character call/order serial numbers is: Office of the Assistant Secretary of the Navy (RD&A), 2211 south Clark Place, Crystal Plaza 5, Room 506, Arlington, VA 22202–3738.

16. Appendix G to Chapter 2 is amended in Part 3 as follows:

Appendix G to Ch. 2 [Amended]

a. By revising entry ''N00244'';

b. By adding, in alpha-numerical order, two new entries ''N3258A'' and ''N47634'';

c. By removing entry ''N68142''; and

d. By revising entry ''N68246''. The revised and added text reads as follows:

Part 3—Navy Activity Address Numbers

* * * * *

N00244 NW—Fleet and Industrial Supply Center San Diego, 937 North Harbor Drive, San Diego, CA 92132–0060,

* * * * *

N3258A FZG—Navy Crane Center, Naval Facilities Engineering Command, 10 Industrial Highway, Mail Stop 82, Lester, PA 19113–2090

* * * * *

N47634 NK—Naval Computer and Telecommunications, Area Master Station, Atlantic, Detachment Pensacola, 130 West Avenue, Suite B, Pensacola, FL 32508–5111

* * * * *

N68246 (MAJ00070) 4LL–N EY—Officer-in-Charge, FISC Yokosuka Det. (Sasebo, Japan), PSC 476, Box 6, FPOAP 96322–1500

* * * * *

17. Appendix G to Chapter 2 is amended in part 4 as follows:

a. In entry ''M67011'' by adding '', MSA'' after ''(MAJ00027)'';

b. In entry ''M67865'' by removing ''J9'' and adding in its place ''MV''; and

c. By adding, in alpha-numerical order, a new entry ''M85001'' to read as follows:

Part 4—Marine Corps Activity Address Numbers

* * * * *

M85001 (MAJ00027)—Contracting Office, Marine Aviation Training Support Group, 222 East Avenue, Pensacola, FL 32508–5213

Part 5—[Amended]

18. Appendix G to Chapter 2 is amended in Part 5 in the entry ''F30602'' by removing ''AFRL/IFOJ'' and adding in its place ''AFRL/IFK''.

19. Appendix G to Chapter 2 is amended by revising Part 9 to read as follows:

Part 9—Defense Threat Reduction Agency Activity Address Numbers

DTRA01 8Z—Defense Threat Reduction Agency (AM), DTRA Annex, 8725 John J. Kingman Road, MSC 6201, Fort Belvoir, VA 22060–6201 (ZT01)

DTRA02 0N—Defense Threat Reduction Agency, Acquisition Management Albuquerque (AMA), 1680 Texas Street SE, Kirtland AFB, NM 87117–5669 (ZT02)

[FR Doc. 00–27243 Filed 10–24–00; 8:45 am]

BILLING CODE 5000–04–M

DEPARTMENT OF DEFENSE

48 CFR Part 219

[DFARS Case 2000–D021]

Defense Federal Acquisition Regulation Supplement; Update of Small Business Specialist Functions

AGENCY: Department of Defense (DoD).

ACTION: Final rule.

SUMMARY: The Director of Defense Procurement has issued a final rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) to update policy pertaining to the functions of small business specialists at DoD contracting activities. The rule provides for small business specialist review of all proposed acquisitions exceeding $10,000 in value.

EFFECTIVE DATE: October 25, 2000.

FOR FURTHER INFORMATION CONTACT: Ms. Susan Schneider, Defense Acquisition Regulations Council, OUSD (AT&L) DP (DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062. Telephone (703) 602–0326; telefax (703) 602–0350. Please cite DFARS Case 2000–D021.

SUPPLEMENTARY INFORMATION:

A. Background

Section 19.201(d) (10) of the Federal Acquisition Regulation (FAR) requires an Office of Small and Disadvantaged Business Utilization within a contracting activity to make recommendations as to whether an acquisition should be awarded under FAR Subpart 19.5 as a small business set-aside, under FAR Subpart 19.8 as a Section 8(a) award, or under FAR Subpart 19.13 as a HUBZone set-aside. The corresponding text at DFARS 219.201(d) required DoD small business specialists to review and make recommendations for all acquisitions over $10,000, except those restricted for exclusive small business participation. This final rule revises DFARS 219.201(d) to provide for small business specialist review of all acquisitions over $10,000, including those restricted for exclusive small business participation. This will permit small business specialists to make recommendations for Section 8(a) awards and HUBZone set-asides in accordance with FAR 19.201(d). The rule also makes editorial changes to update and clarify the text.

This rule was not subject to Office of Management and Budget review under Executive Order 12866, dated September 30, 1993.

B. Regulatory Flexibility Act

This final rule does not constitute a significant revision within the meaning of FAR 1.501 and Public Law 98–577 and publication for public comment is not required. However, DoD will consider comments from small entities concerning the affected DFARS subpart in accordance with 5 U.S.C. 610. Such comments should cite DFARS Case 2000–D021.

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the rule does not impose any information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Part 219

Government procurement.

Michele P. Peterson,

Executive Editor, Defense Acquisition Regulations Council.

Therefore, 48 CFR Part 219 is amended as follows:

1. The authority citation for 48 CFR Part 219 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

PART 219—SMALL BUSINESS PROGRAMS

2. Section 219.201 is amended by revising paragraph (d) to read as follows:

219.201 General policy.

* * * * *

(d) For the defense agencies, the director of the Office of Small and Disadvantaged Business Utilization must be appointed by, be responsible to, and report directly to the director or deputy director of the defense agency.

(8) The responsibility for assigning small business technical advisors is delegated to the head of the contracting activity.

(10) Contracting activity small business specialists perform this function by—

(A) Reviewing and making recommendations for all acquisition over $10,000;

(B) Making the review before issue of the solicitation or contract modification and documenting it on DD Form 2579, Small Business Coordination Record; and

(C) Referring recommendations that have been rejected by the contracting officer to the Small Business Administration (SBA) procurement center representative. However, if an SBA representative is not assigned or available, the specialist refers the matter to the specialist's appointing authority.

* * * * *

[FR Doc. 00–27244 Filed 10–24–00; 8:45 am]
BILLING CODE 5000–04–M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Part 1842

Final Indirect Cost Rates

AGENCY: National Aeronautics and Space Administration (NASA).

ACTION: Final rule.

SUMMARY: This is a final rule amending the NASA FAR Supplement (NFS) to provide guidance on when NASA participation should occur in the determination of final indirect cost rates.

EFFECTIVE DATE: October 25, 2000.

FOR FURTHER INFORMATION CONTACT: Mr. Joseph Le Cren, NASA Headquarters, Office of Procurement, Contract Management Division (Code HK), Washington, DC 20546, telephone: (202) 358–0444, e-mail: *joseph.lecren@hq.nasa.gov.*

SUPPLEMENTARY INFORMATION:

A. Background

A NASA Office of Inspector General report interpreted the coverage at NFS 1842.705–1 to always require NASA participation in final indirect cost rate determinations where the agency has a major financial interest. The intent of the coverage was that NASA should participate in final indirect cost rate determinations when invited by the cognizant contracting officer, and the issues involved would have a significant financial impact on the agency. NASA should not participate when the issues would not have a significant impact on the agency. The NFS revision more clearly communicates this intent. The NFS revision also specifies that, in cases where the issues involved in the final indirect cost rate determination would have a significant financial impact on the agency and a decision is made not to participate, the decision needs to be communicated to the cognizant contracting officer.

B. Regulatory Flexibility Act

This final rule does not constitute a significant revision within the meaning of FAR 1.501 and Pub. L. 98–577, and publication for public comments is not required. However, comments from small entities concerning the affected NFS subpart will be considered in accordance with 5 U.S.C. 610. Such comments must be submitted separately and should cite 5 U.S.C. 601, *et seq.*

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the changes to the NFS do not impose recordkeeping or information collection requirements, or collections of information from offerors, contractors, or members of the public which require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Part 1842

Government procurement.

Tom Luedtke,
Associate Administrator for Procurement.

Accordingly, 48 CFR Part 1842 is amended as follows:

1. The authority citation for 48 CFR Part 1842 continues to read as follows:

Authority: 42 U.S.C. 2473 (c)(1).

PART 1842—CONTRACT ADMINISTRATION AND AUDIT SERVICES

2. Revise section 1842.705–1 to read as follows:

1842.705–1 Contracting officer determination procedure.

(b) *Procedures.*

(3)(i) When NASA is not the cognizant Federal agency, NASA should participate with the cognizant contracting officer (or cognizant Federal agency official) in the final indirect cost rate determination procedure where the issues involved would have a significant financial impact on the agency. The NASA participant should be a representative from that installation providing the preponderance of NASA funding. If a determination is made that NASA's participation is not warranted, that decision must be communicated to the cognizant contracting officer (or cognizant Federal agency official).

(ii) When NASA is the cognizant Federal agency, settlement of indirect costs should be conducted by the cognizant NASA contracting officer (normally from the installation providing the preponderance of NASA funding).

[FR Doc. 00–27294 Filed 10–24–00; 8:45 am]
BILLING CODE 7510–01–U

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 635

[I.D. 101700B]

Atlantic Highly Migratory Species Fisheries; Atlantic Bluefin Tuna

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Retention limit adjustment.

SUMMARY: NMFS adjusts the daily retention limit for the Angling category fishery for Atlantic bluefin tuna (BFT) in all areas to two school BFT, measuring 27 to less than 47 inches (69 to less than 119 cm) curved fork length, and two BFT from either the large school or small medium size class, measuring 47 to less than 73 inches (119 to less than 150 cm) curved fork length, per vessel from October 22, 2000, through November 26, 2000. In addition, NMFS is making subsequent adjustments to the daily retention limit. This action is being taken to provide increased fishing and data collection opportunities in all areas without risking overharvest of this category.

DATES: Effective 1 a.m., local time, October 22, 2000, until 11:30 p.m., local time, November 26, 2000, the daily retention limit in all areas is adjusted to two school BFT and two large school or small medium BFT.

Effective November 27, 2000, the daily retention limit in all areas is adjusted to one large school or small medium BFT until May 31, 2001.

FOR FURTHER INFORMATION CONTACT: Pat Scida or Brad McHale, 978–281–9260.

SUPPLEMENTARY INFORMATION: Regulations implemented under the authority of the Atlantic Tunas Convention Act (16 U.S.C. 971 *et seq.*) and under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*) governing the harvest of BFT by persons and vessels subject to U.S. jurisdiction are found at 50 CFR part 635.

Implementing regulations for the Atlantic tuna fisheries at 50 CFR 635.23 allow for adjustments to the daily retention limits in order to provide for maximum utilization of the quota spread over the longest possible period of time. NMFS may increase or reduce the per-angler retention limit for any size class BFT or may change the per-angler limit to a per-boat limit or the per-boat limit to a per-angler limit. In addition, NMFS may make closures or changes to a retention limit effective in certain areas and/or regions.

NMFS is responsible for implementing a recommendation of the International Commission for the Conservation of Atlantic Tunas (ICCAT) to limit the catch of school BFT to no more than 8 percent by weight of the total domestic quota over each 4-consecutive-year period. NMFS implements this ICCAT recommendation through annual and inseason adjustments to the school BFT landings and school BFT reserve categories, as necessary, and through the establishment of a school BFT reserve (64 FR 29090, May 28, 1999; 65 FR 42883, July 12, 2000). The recent ICCAT recommendation allows NMFS more flexibility to make interannual adjustments for overharvests and underharvests, provided that the 8-percent landings limit is met over the applicable 4-consecutive-year period. This approach provides NMFS with the flexibility to enhance fishing opportunities and the collection of information on a broad range of BFT size classes and responds to requests from the recreational fishing community for more advance notice of retention limit adjustments and greater stability and certainty in planning for the fishing season.

Over the last several years, NMFS has received comments from Angling category fishermen that the implementation of an increased daily retention limit over a date-certain period is preferable to a longer season with a lower daily retention limit as it facilitates the scheduling of fishing trips, particularly charter trips. In 2000, as in 1999, NMFS increased the daily retention limit for two date-certain time periods, and comments from Angling category participants have been positive. The most recent period with an increased daily retention limit was September 1 through October 15, 2000, when the limit was two school BFT and two large school or small medium BFT per vessel, in all areas.

Preliminary Large Pelagic Survey estimates of landings for June through October 1, 2000, indicate that approximately 16.3 metric tons (mt) of school BFT and approximately 37.8 mt of large school or small medium BFT have been landed. These figures are approximately 12.0 and 15.7 percent of the 2000 Angling category quotas for school and large school or small medium BFT, respectively, as established on July 12, 2000 (65 FR 42883) and subsequently adjusted by an inseason transfer of 60 mt from the Angling North large school or small medium subcategory to the General category.

Since October 16, 2000, the daily retention limit has been set at one large school or small medium BFT per vessel. Considering the relatively low landings to date, the availability of quota, and recent reports that BFT are still available to anglers in portions of the mid-Atlantic fishing area, NMFS has determined that an increase to the Angling category daily retention limit is warranted. Consistent with the objectives of the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks, such an increase would allow for maximum utilization of the U.S. landings quota of BFT while maintaining a fair distribution of fishing opportunities, would help achieve optimum yield in the Angling category fishery, and would help collect a broad range of data for stock monitoring purposes.

Effective October 22, 2000, through November 26, 2000, the BFT Angling category daily retention limit for all areas will be two school BFT and two BFT from either the large school or small medium size class per vessel. After November 26, 2000, the daily retention limit for all areas will be one large school or small medium BFT per vessel. The daily retention limit and the duration of daily retention limit adjustment have been selected based on an examination of past and current catch and effort rates. NMFS will continue to monitor the Angling category fishery closely through the Automated Landings Reporting System, the state harvest tagging programs in North Carolina and Maryland, and the Large Pelagic Survey. Depending on the level of fishing effort and catch rates of BFT, NMFS may determine that an interim closure or additional retention limit adjustment, in all or some areas, is necessary to enhance scientific data collection and fishing opportunities. Additionally, NMFS may determine that an allocation from the school BFT reserve is warranted to further fishery management objectives.

Closures or subsequent adjustments to the daily retention limit, if any, shall be announced through publication in the **Federal Register**. In addition, anglers may call the Atlantic Tunas Information Line at 888–USA–TUNA (888–872–8862) or 978–281–9305 for updates on quota monitoring and retention limit adjustments. Anglers aboard Charter/Headboat category vessels, when engaged in recreational fishing for school, large school, and small medium BFT are subject to the same rules as anglers aboard Angling category vessels. All BFT landed under the Angling category quota must be reported within 24 hours of landing to the NMFS Automated Landings Reporting System by calling 888–USA–TUNA (888–872–8862) or, if landed in the states of North Carolina or Maryland, to a reporting station prior to offloading. Information about these state harvest tagging programs, including reporting station locations, can be obtained in North Carolina by calling (800) 338–7804, and in Maryland by calling (410) 213–1531.

Classification

This action is taken under 50 CFR 635.23(b)(3). This action is exempt from review under Executive Order 12866.

Authority: 16 U.S.C. 971 *et seq.* and 1801 *et seq.*

Dated: October 19, 2000.

Dean Swanson,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 00–27313 Filed 10–20–00; 2:28 pm]

BILLING CODE: 3510–22 –S

Proposed Rules

Federal Register

Vol. 65, No. 207

Wednesday, October 25, 2000

DEPARTMENT OF ENERGY

48 CFR Parts 928, 944, 952 and 970

10 CFR Part 719

RIN 1990–AA27

Contractor Legal Management Requirements; Acquisition Regulations

AGENCY: Department of Energy.

ACTION: Notice of proposed rulemaking and opportunity for public comment.

SUMMARY: The Department of Energy (Department) is proposing to establish new regulations covering contractor legal management requirements. Conforming amendments are also proposed to the Department of Energy Acquisition Regulation (DEAR). The proposed regulation will cover legal costs to be reimbursed by the Department to its facility management contractors with contracts exceeding $10,000,000. An appendix to the regulations provides additional guidance to contractors.

DATES: Written comments must be received on or before the close of business November 24, 2000.

ADDRESSES: Comments (3 copies) should be addressed to: Laura Fullerton, GC–61, U.S. Department of Energy, Office of Procurement and Assistance Management, 1000 Independence Avenue, SW, Washington, DC 20585.

FOR FURTHER INFORMATION CONTACT: Laura Fullerton at (202) 586–3420 (Laura.Fullerton@hq.doe.gov) or Anne Broker at (202) 586–5060 (Anne.Broker@hq.doe.gov).

SUPPLEMENTARY INFORMATION

I. Background

The cost principles and contract clauses in the Department's contracts generally make legal costs, including the cost of litigation, allowable if reasonable and incurred in accordance with the applicable cost principles and contract clauses. Consequently, the Department has an ongoing obligation to monitor, supervise, and control the legal costs that it reimburses.

The Department has engaged contractors in a public dialogue aimed at controlling the increasing legal costs reimbursed by the Department. On August 31, 1994, the Department published an interim Acquisition Letter as an interim policy in the **Federal Register** (59 FR 44981). The interim Acquisition Letter established the Department's policy regarding the terms of engagement that are a condition of any authorization to a current or former management and operating (M&O) contractor to engage a law firm for purposes of litigation. The interim Acquisition Letter, was finalized as a Policy Statement on April 3, 1996 (61 FR 14763).

The Department also developed, and distributed to field counsel, Litigation Management Procedures, as a contract reform action item on March 23, 1994. The Litigation Management Procedures and the Final Policy Statement have been referenced in, and attached to, the Department's management and operating contracts executed since then. This rulemaking action has its basis in those two documents.

This proposed rulemaking is intended to create a new Part 719, in Chapter 10 of the Code of Federal Regulations, to establish regulations to monitor and control legal costs and to provide guidance to aid contractors and Department personnel in making determinations regarding the reasonableness of all outside legal costs, including the costs of litigation. Today's proposed rules and guidance would cover all outside legal costs incurred by contractors with contracts exceeding $10,000,000 at facilities owned or leased by the Department. The policies would also apply to legal counsel retained by the Department itself for litigation or other legal services where the legal costs over the life of the matter for which counsel has been retained are expected to exceed $100,000.

The Department previously determined that case-by-case review of contractor agreements with outside law firms is necessary to ensure effective control of contractor litigation costs. The Department now realizes that this procedure needs to be extended to a broader category of contractor legal costs, whether or not litigation is involved, for contracts at facilities owned or leased by the Department.

To facilitate that case-by-case review, the proposed regulation would require submission of a legal management plan by contractors where costs for legal services are to be reimbursed by the Department. Once approved by the Department, the legal management plan, as well as applicable regulations and contract provisions, will form the basis for approvals by the Department to reimburse litigation and other legal expenses.

The proposed regulation also identifies those costs that would be generally considered allowable and those that would be considered unallowable. Costs not identified as specifically allowable or unallowable are still subject to the general rules of allowability and reasonableness. Additionally, the acquisition of legal services by contractors falls within the ambit of 48 CFR (DEAR) Part 944 and Subpart 970.71, which cover contractor purchasing.

In addition to the proposed regulatory material included in this notice, an Appendix to Part 719 is attached which provides additional ''safe harbor'' guidance for legal management practices. The guidance provided in the Appendix may be updated from time to time by the Department and those updates will be distributed to contractors, contracting officers and Department counsel.

The Department also proposes to add 48 CFR (DEAR) 970.5204–31, Insurance-Litigation and Claims, to the contract clauses in 48 CFR (DEAR) Part 952 to clarify the requirement that facility management contracts exceeding an amount of $10,000,000 must include this clause. The application of the proposed legal management regulation would be tied to the application and use of the Insurance-Litigation and Claims clause, or a specialized clause requiring compliance with Part 719, in a facility management contract. The Insurance-Litigation and Claims clause already contains a requirement that contractors keep the Department informed of new and ongoing litigation, whether or not the costs are to be reimbursed.

Finally, conforming technical amendments to the Department of Energy's Acquisition Regulation (DEAR), at 48 CFR Chapter 9, are proposed at the end of this notice of proposed rulemaking.

II. Discussion of Rule Provisions

Subpart A, Sections 719.1–719.7, sets out general provisions providing definitions and addressing who is covered by this part. Section 719.3 states that the Department's contracts for an amount exceeding $10,000,000 for work performed at facilities owned or leased by the Department and containing the Insurance-Litigation and Claims clause are covered contracts subject to the proposed regulation. Section 719.3 also makes it clear that reimbursement of contractor legal costs under covered contracts is subject to compliance with the proposed regulation. Coverage is also extended to legal counsel, in section 719.4, retained by the Department itself where the legal costs are expected to exceed $100,000 for a particular matter. Procedures for exceptions or deviations are set out in section 719.7. The procedures call for a determination by the General Counsel. In the case of a Department contract, the determination would be made by the Department's General Counsel; in the case of a National Nuclear Security Administration (NNSA) contract, it would be made by the NNSA General Counsel.

Subpart B, Sections 719.10–719.17, describes the requirement for submission of a legal management plan and what is to be included in the plan. Subparagraphs (c)(6) and (d)(1) in section 719.10 require that experience as an advocate in alternative dispute resolution procedures, primarily mediation, be considered as a factor in selection of retained counsel, and a system for identification of matters suitable for alternative dispute resolution be described in the legal management plan. Contractors will have 60 days following execution of a contract with the Department for submission of the legal management plan. Section 719.15 sets out a requirement for submission of a staffing and resource plan for significant matters, and section 719.16 requires submission of the staffing and resource plan no later than 30 days after the filing of an answer in a significant matter involving litigation. Section 719.17 requires submission of an annual legal budget for matters for which reimbursable legal costs will exceed $100,000. The annual budget should be broken down by activity or phase of a matter. The Department is interested in receiving comments on whether there is value added by having budget submission requirements in both subparagraph 719.15(c), as part of a staffing and resource plan, and in section 719.17.

Subpart C, Sections 719.20–719.21, describes the requirements for engagement letters. Engagement letters must be prepared and submitted to retained legal counsel for matters where costs are expected to exceed $25,000. Subparagraph 719.21(b)(10) requires the contractor to include the right of the government to inspect, copy and audit documentation of billable fees and other records where the Department is reimbursing the legal costs.

Subpart D, Sections 719.30–719.39, describes the policies and limitations for reimbursement of legal costs associated with retained legal counsel. Sections 719.32–719.35 describe categories of costs which require special treatment or advance approval. Requirements for contractor management of subcontractor legal matters, so that the contractor keeps the Department informed about significant legal matters, are set out in section 719.37. Section 719.37 also prohibits the prime contractor from bundling subcontractor legal costs with non-legal costs in submissions for reimbursements so that subcontractor legal costs are clearly identified to Department counsel.

Subpart E, Sections 719.40–719.42, sets out requirements for the Department's field office counsel. Requests for reimbursement of legal costs made by contractors and retained legal counsel are discussed in sections 719.40–719.41. Section 719.42 describes the types of recommendations made by field counsel which must be coordinated with Headquarters.

III. Public Comments

Interested persons are invited to participate by submitting data, views or arguments with respect to the new regulation proposed in this notice. Three copies of written comments should be submitted to the address indicated in the ADDRESSES section of this notice. All comments received will be available for public inspection as part of the administrative record on file for this rulemaking in the Department of Energy Reading Room, Room 1E–090, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 586–3142, between the hours 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. All written comments received by the date indicated in the DATES section of this notice of proposed rulemaking and all other relevant information in the record will be carefully assessed and fully considered prior to the publication of the final rule. Any information or data considered to be exempt from public disclosure by law must be so identified and submitted in writing, one copy, as well as one complete copy from which the information believed to be exempt from disclosure is deleted. The Department will determine if the information or data is exempt from disclosure.

IV. Procedural Requirements

A. Review Under Executive Order 12866

Today's regulatory action has been determined not to be a ''significant regulatory action'' under Executive Order 12866, ''Regulatory Planning and Review,'' (58 FR 51735, October 4, 1993). Accordingly, this action was not subject to review under that Executive Order by the Office of Information and Regulatory Affairs of the Office of Management and Budget (OMB).

B. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, ''Civil Justice Reform,'' 61 FR 4729 (February 7, 1996), imposes on Executive agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. With regard to the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. The Department has completed the required review and determined that, to the extent permitted by law, the regulations meet the relevant standards of Executive Order 12988.

C. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 601, *et seq.*, requires that a Federal agency prepare a regulatory flexibility analysis for any rule for which the agency is required to publish a general notice of proposed rulemaking. Such an analysis is not required, however, if the agency certifies that the rule would not, if promulgated, have a significant economic impact on a substantial number of small entities (5 U.S.C. 605(b)).

The Department certifies that today's proposal creating a new part 10 CFR Part 719 will not have a significant economic impact on a substantial number of small entities. This rule will only restate and clarify the Department's restrictions on the reimbursement of contractor legal costs. The rule will affect only potential claims for reimbursement of costs. The rule will not directly regulate small entities.

D. Review Under the Paperwork Reduction Act

The proposed rule would require each covered contractor to submit a legal management plan that describes the contractor's practices for managing legal costs and matters for which it procures the services of retained legal counsel. This collection of information is required for the Department to determine whether to approve reimbursement of contractors' litigation and other legal expenses.

The Department is submitting to the Office of Management and Budget (OMB), simultaneously with the publication of this proposed rule, this proposed collection of information for review and approval under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection has been reviewed and assigned a control number by OMB. Interested persons may obtain a copy of the Paperwork Reduction Act Submission from the contact person named in this notice.

Interested persons are invited to submits comments to OMB addressed to: Department of Energy Desk Officer, Office of Information and Regulatory Affairs, OMB, 725 17th Street, NW., Washington, DC 20503. Persons submitting comments to OMB also are requested to send a copy to the contact person at the address given in the **ADDRESSES** section of this notice. OMB is particularly interested in comments on: (1) The necessity for the proposed collection of information, including whether the information will have practical utility; (2) the accuracy of DOE's estimates of the burden; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

The proposed requirements for completion of a legal management plan under this regulation are essentially the same as the currently existing requirements that have applied to management and operating contractors for several years, with the difference that this rulemaking will extend the requirements to all legal matters and not just litigation matters.

Preparation of the initial Legal Management Plan will usually be a one-time action completed at the start of a five year contract. The estimated time for preparation of this initial plan is 15–30 hours. This estimate is based on discussions with contractors about their current burden for preparing litigation management plans. The only requirement for updating relates to the submission of an annual budget for significant matters. This revision is estimated to be about 10 hours. Approximately 36 contractors will be subject to the requirement to submit a Legal Management Plan. The Department estimates that in any one year approximately 20% or 7 Legal Management Plans will be submitted to the Department for approval each year. The total annual paperwork burden that will result from these requirements is estimated to be approximately 465 to 570 hours.

E. Review Under the National Environmental Policy Act

The Department has concluded that promulgation of this proposed rule falls into a class of actions which would not individually or cumulatively have significant impact on the human environment, as determined by Department of Energy regulations (10 CFR part 1021, subpart D) implementing the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*). Specifically, this proposed rule is categorically excluded from NEPA review because the amendments to the DEAR would be strictly procedural (categorical exclusion A6). Therefore, this proposed rule does not require an environmental impact statement or environmental assessment pursuant to NEPA.

F. Review Under Executive Order 13132

Executive Order 13132 (64 FR 43255, August 10, 1999) requires agencies to develop an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have "federalism implications." As defined in the Executive Order, policies that have federalism implications include regulations that have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. The Department has examined this proposed rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. No further action is required by Executive Order 13132.

G. Review Under the Unfunded Mandates Reform Act of 1995

The Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) generally requires a Federal agency to perform a detailed assessment of costs and benefits of any rule imposing a Federal Mandate with costs to State, local or tribal governments, or to the private sector, of $100 million or more. This rulemaking affects private sector entities, and the impact is less than $100 million. H. Review Under the Treasury and General Government Appropriations Act, 1999 Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub.L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any proposed rule or policy that may affect family well-being. Today's rule does not impact on the autonomy or integrity of the family institution. Accordingly, the Department has concluded that it is not necessary to prepare a Family Policymaking Statement.

List of Subjects

10 CFR Part 719

Government contracts, Lawyers, Legal matters.

48 CFR Parts 928, 944, 952 and 970.

Government procurement.

Issued in Washington, D.C. on October 16, 2000.

T. J. Glauthier,

Deputy Secretary.

For the reasons set out in the preamble, Chapter III of title 10 and Chapter 9 of title 48 of the Code of Federal Regulations are proposed to be amended as set forth below:

1. 10 CFR Part 719 is added to read as follows:

PART 719—CONTRACTOR LEGAL MANAGEMENT REQUIREMENTS

Subpart A—General Provisions

Subpart B—Legal Management Plan

Subpart C—Engagement Letter

Subpart D—Reimbursement of Costs Subject to This Part

Subpart E—Department Counsel Requirements

Appendix to Part 719—Guidance for Legal Resource Management

Authority: 42 U.S.C. 2201, 5814, 5815, 7101 *et seq.*; 50 U.S.C. 2401, *et seq.*

Subpart A—General Provisions

§ 719.1 What is the purpose of this part?

This part is intended to facilitate control of Department and contractor legal costs, including litigation costs. The contractor is required to develop a procedure for retaining legal counsel, and to document the analysis used to decide when, where and who will be engaged as outside counsel and the terms of the engagement. Payment of law firm invoices and reimbursement of contractor legal costs under covered contracts is subject to compliance with this part.

§ 719.2 What are the definitions of terms used in this part?

For purposes of this part:

Alternative dispute resolution includes processes such as mediation, neutral evaluation, mini-trials and arbitration.

Contractor means any person or entity with whom the Department contracts for the acquisition of goods or services.

Covered contracts means those contracts described in §§ 719.3 and 719.4.

Department means the Department of Energy, including the National Nuclear Security Administration.

Department counsel means the individual in the field office, or Headquarter's office, designated as the contracting officer's representative and point of contact for a contractor or Department retained legal counsel, for purposes of this part only, for submission and approval of the legal management plan, advance approval of certain costs, and submission of a staffing and resource plan, as addressed in this part.

Legal costs include, but are not limited to, administrative expenses associated with the provision of legal services by retained legal counsel; the costs of legal services provided by retained legal counsel; the costs of the services of accountants, consultants, or others retained by the contractor or by retained legal counsel to assist retained legal counsel; and any similar costs incurred by or in connection with the services of retained legal counsel.

Legal management plan means a statement describing the contractor's practices for managing legal costs and matters for which it procures the services of retained legal counsel.

Retained legal counsel means members of the bar working in the private sector, either individually or in law firms, who are retained by a contractor or the Department to provide legal services.

Significant matters means legal matters, including litigation, involving significant issues as determined by Department counsel, and any legal matter where the amount of any legal costs, over the life of the matter, is expected to exceed $100,000.

Staffing and resource plan means a statement prepared by retained legal counsel describing plans for managing a significant matter.

§ 719.3 What contracts are covered by this part?

This part covers cost reimbursement contracts:

(a) For an amount exceeding $10,000,000;

(b) Involving work performed at the facilities owned or leased by the Department; and

(c) Containing the contract clause Insurance-Litigation and Claims, 48 CFR (DEAR) 952.228–1 or 970.5204–31, or a specialized clause requiring compliance with this part.

§ 719.4 Are law firms that are retained by the Department covered by this part?

Retained legal counsel under contract with the Department itself to provide legal services must also comply with this part where the legal costs over the life of the matter for which counsel has been retained are expected to exceed $100,000.

§ 719.5 What contracts are not covered by this part?

This part does not cover:

(a) Fixed price contracts; and

(b) Cost reimbursement contracts for an amount less than $10,000,000.

§ 719.6 Are there any types of legal matters not included in the coverage of this part?

Matters not covered by this part include:

(a) Matters handled by counsel retained by an insurance carrier, except for insurance providers of third party administrator services or retrospective policies where the Department has retained the risk of liability;

(b) Routine intellectual property law support services;

(c) Routine unemployment compensation matters and labor arbitrations; and

(d) Routine matters handled by counsel retained through a GSA supply schedule.

§ 719.7 Is there a procedure for exceptions or deviations from this part?

(a) Requests for exceptions or deviations from this part by contractors must be made in writing to Department counsel and approved by the General Counsel. If an alternate procedure is proposed for compliance with an individual requirement in this part, that procedure must be included in the written request by the contractor.

(b) The General Counsel may authorize exceptions based on a recommendation of Department counsel. The General Counsel may also establish exceptions to this part based on current field office and contractor practices which satisfy the purpose of these requirements.

(c) Exceptions to this part which are also a deviation from the cost principles (see subpart D of this part) must be approved by the Procurement Executive. See 48 CFR (FAR) 31.101. Written requests from contractors for a deviation to a cost principle must be submitted to the contracting officer, with a copy provided to Department counsel.

Subpart B—Legal Management Plan

§ 719.10 What information must be included in the legal management plan?

The legal management plan must include the following items:

(a) A description of the legal matters that may necessitate handling by retained legal counsel.

(b) A discussion of the factors the contractor will consider in determining whether to handle a particular matter utilizing retained legal counsel.

(c) An outline of the factors the contractor will consider in selecting retained legal counsel, including:

(1) Competition;

(2) Past performance and proficiency shown by previously retained counsel;

(3) Particular expertise in a specific area of the law;

(4) Familiarity with the Department's activity at the particular site and the prevalent issues associated with facility history and current operations;

(5) Location of retained legal counsel relative to:

(i) The site involved in the matter,

(ii) Any forum in which the matter will be processed, and

(iii) Where a significant portion of the work will be performed;

(6) Experience as an advocate in alternative dispute resolution procedures such as mediation;

(7) Actual or potential conflicts of interest; and

(8) The means and rate of compensation (e.g., hourly billing, fixed fee, blended fees, etc.).

(d) A description of:

(1) The system that the contractor will use to review each case to determine whether and when alternative dispute resolution is appropriate;

(2) The role of in house counsel in cost management;

(3) The contractor's process for review and approval of invoices from outside law firms or consultants;

(4) The contractor's strategy for interaction with, and supervision of, retained legal counsel;

(5) How appropriate interaction with the contracting officer and Department counsel will be ensured; and,

(6) The contractor's corporate approach to legal decision making.

§ 719.11 Who must submit a legal management plan?

Contractors identified under § 719.3 must submit a legal management plan.

§ 719.12 When must the plan be submitted?

Contractors identified under § 719.3 must submit a legal management plan within 60 days following the execution of a contract with the Department.

§ 719.13 Who at the Department must receive and review the plan?

The contractors identified under § 719.3 must file a legal management plan with Department counsel.

§ 719.14 Will the Department notify the contractor concerning the adequacy or inadequacy of the submitted plan?

(a) The Department will notify the contractor within 30 days of the contractor's submission of the plan of any deficiencies in its submitted plan.

(b) The contractor must correct identified deficiencies within 30 days of notice of the deficiency.

§ 719.15 What are the requirements for a staffing and resource plan?

(a) For significant matters, the contractor must require retained legal counsel providing legal services to prepare a staffing and resource plan as provided in this section. The contractor must then forward the staffing and resource plan to Department counsel. Department retained counsel subject to this part must prepare a staffing and resource plan and forward it to Department counsel.

(b) A staffing and resource plan is a plan describing:

(1) Major phases likely to be involved in the handling of the matter;

(2) Timing and sequence of such phases;

(3) Projected cost for each phase of the representation; and

(4) Numbers and mix of resources, when applicable, that the retained legal counsel intends to devote to the representation.

(c) For significant matters in litigation, in addition to the generalized annual budget required by § 719.10, a staffing and resource plan must include a budget, broken down by phases, including at a minimum:

(1) Matter assessment, development and administration;

(2) Pretrial pleadings and motions;

(3) Discovery;

(4) Trial preparation and trial; and

(5) Appeal.

§ 719.16 When must the staffing and resource plan be submitted?

(a) For significant matters in litigation, the contractor or Department retained counsel must submit the staffing and resource plan no later than 30 days after the filing of an answer or a dispositive motion in lieu of an answer.

(b) For other significant legal services matters, the contractor or Department retained counsel must submit the staffing and resource plan within 30 days following execution of an engagement letter.

(c) Contractors and Department retained counsel must submit updates to staffing and resource plans annually or sooner if significant changes occur in the matter.

§ 719.17 Are there any budgetary requirements?

(a) Contractors required to submit a legal management plan must also submit an annual legal budget to Department counsel.

(b) The annual legal budget must include cost projections for known or existing matters for which reimbursable legal costs will exceed $100,000, at a level of detail reflective of the types of billable activities and the stage of each such matter.

(c) At the conclusion of the period covered by each annual legal budget, the contractor must report on its success on staying within budget.

Subpart C—Engagement Letter

§ 719.20 When must an engagement letter be used?

Contractors must prepare and submit an engagement letter to retained legal counsel expected to provide $25,000 or more in legal services and submit a copy of this correspondence, including correspondence from retained legal counsel addressing issues under § 719.21(b), to Department counsel.

§ 719.21 What are the required elements of an engagement letter?

(a) The engagement letter must require retained legal counsel to assist the contractor in complying with this part and any supplemental guidance distributed under this part.

(b) At a minimum, the engagement letter must include the following:

(1) A process for review and documented approval of all billing by a contractor representative, including the timing and scope of billing reviews.

(2) A statement that provision of records to the Government does not constitute a waiver of any applicable legal privilege, protection, or immunity with respect to disclosure of these records to third parties.

(3) A requirement that the contractor, the Department, and the General Accounting Office, have the right upon request, at reasonable times and locations, to inspect, copy, and audit all records documenting billable fees and costs and any other records or systems of records relevant to the representation by retained legal counsel.

(4) A statement that all records must be retained for a period of three (3) years after the final payment.

(c) The contractor must obtain the following information from retained counsel:

(1) Identification of all attorneys and staff who will be assigned to the matter and the rate and basis of their compensation i.e., hourly rates, fixed fees, contingency arrangement).

(2) An initial assessment of the matter, along with a commitment to provide updates as necessary.

(3) A description of billing procedures, including frequency of billing and billing statement format.

(d) The contractor must obtain retained counsel's agreement to the following:

(1) That in significant matters a staffing and resource plan for the conduct of the matter will be submitted by the retained legal counsel to the contractor in accordance with the requirements of §§ 719.15 and 719.16.

(2) That alternative dispute resolution will be considered at as early a stage as possible where litigation is involved.

(3) That retained counsel will comply with the cost guidelines in this subpart C.

(4) That retained counsel will provide a certification concerning the costs submitted for reimbursement that is consistent with the certification in the Attachment to Appendix A to this part.

(5) That professional conflicts of interest issues will be identified and addressed promptly.

(e) Additional requirements may be included in an engagement letter based on the needs of the contractor or the office requiring the Department retained counsel.

Subpart D—Reimbursement of Costs Subject to This Part

§ 719.30 Is there a standard for determining cost reasonableness?

The standard for cost reasonableness determinations is contained in the Federal Acquisition Regulation (FAR), at 48 CFR (FAR) 31.201–3.

§ 719.31 How does the Department determine whether fees are reasonable?

In determining whether fees or rates charged by retained legal counsel are reasonable, the Department may consider:

(a) Whether the lowest reasonably achievable fees or rates (including any currently available or negotiable discounts) were obtained from retained legal counsel;

(b) Whether lower rates from other firms providing comparable services were available;

(c) Whether alternative rate structures such as flat, contingent, and other innovative proposals, were utilized;

(d) The complexity of the legal matter and the expertise of the law firm in this area; and

(e) The factors listed in § 719.10(c).

§ 719.32 For what costs is the contractor, or Department retained counsel, limited to reimbursement of actual costs only?

All costs are reimbursable for actual costs only, with no overhead or surcharge adjustments.

§ 719.33 What categories of costs are unallowable?

(a) Specific categories of unallowable costs are contained in the cost principles at 48 CFR (FAR) part 31 and 48 CFR (DEAR) part 931 and 970.31. See also 41 U.S.C. 256(e).

(b) The Department will not consider for reimbursement any costs incurred for entertainment or alcoholic beverages. See 48 CFR (FAR) 31.205–14 and 31.205–51 and 41 U.S.C. 256(e).

(c) Costs that are customarily or already included in billed hourly rates are not separately reimbursable.

(d) Interest charges that a contractor incurs on any outstanding (unpaid) bills from retained legal counsel are not reimbursable.

§ 719.34 What is the treatment for travel costs?

Travel and related expenses must at a minimum comply with the restrictions set forth in 48 CFR (FAR) 31.205–46, or 48 CFR (DEAR) 970.3102–46, as appropriate, to be reimbursable.

§ 719.35 What categories of costs require advance approval?

Costs for the following will not be eligible for reimbursement without prior written approval from Department counsel:

(a) Computers or general application software, or computerized databases specifically created for a particular matter;

(b) Charges for materials or non-attorney services expected to exceed $5,000;

(c) Secretarial and support services, word processing, or temporary support personnel;

(d) Attendance by more than one person at a deposition, court hearing, interview or meeting;

(e) Expert witnesses and consultants;

(f) Trade publications, books, treatises, background materials, and other similar documents;

(g) Professional or educational seminars and conferences;

(h) Preparation of bills or time spent responding to questions about bills from either the Department or the contractor;

(i) Food and beverages when the attorney or consultant is not on travel status and away from the home office; and

(j) Pro hac vice admissions.

§ 719.36 Who at the Department must give advance approval?

If advance approval is required under this part, the advance approval must be obtained from the Department counsel unless the Department counsel indicates that approval of a request may only be given by the contracting officer.

§ 719.37 Are there any special procedures or requirements regarding subcontractor legal costs?

(a) The contractor must have a monitoring system for subcontractor legal matters likely to reach $100,000 over the life of the matter. The purpose of this system is to enable the contractor to perform the same type of analysis and review of subcontractor legal management practices that the Department can perform of the contractor's legal management practices. The monitoring is intended to enable the contractor to keep the Department informed about significant subcontractor legal matters, including significant matters in litigation. The burden will be on the prime contractor to be responsive to questions raised by the Department concerning significant subcontractor legal matters.

(b) Subcontractor legal costs are not allowable without the prior approval of Department counsel.

§ 719.38 Will costs covered by this part be subject to audit?

All costs covered by this part are subject to audit by the Department, its designated representative or the General Accounting Office. See § 719.21.

§ 719.39 What happens when more than one contractor is a party to a matter?

(a) If more than one contractor is a party in a particular matter and the issues involved are similar for all the contractors, a single legal counsel designated by Department counsel must either represent all of the contractors or serve as lead counsel, when the rights of the contractors and the government can be effectively represented by a single legal counsel, consistent with the standards for professional conduct applicable in the particular matter.

(b) If a contractor, having been afforded an opportunity to present its views concerning joint or lead representation, does not acquiesce in the designation of one retained legal counsel to represent a number of contractors, or serve as lead counsel, then the legal costs of such contractor are not reimbursable by the Department, unless the contractor persuasively shows that it was reasonable for the contractor to incur such expenses.

Subpart E—Department Counsel Requirements

§ 719.40 What is the role of Department counsel as a contracting officer's representative?

(a) The individual selected as Department counsel for a contract subject to the requirements of this part must be approved by the contracting officer and the appropriate Chief Counsel, or General Counsel if at Headquarters. The Department counsel must receive written delegated authority from the contracting officer to serve as the contracting officer's representative for legal matters. The contractor will receive a copy of this delegation of authority.

(b) Actions by Department counsel may not exceed the responsibilities and limitations as delegated by the contracting officer. Delegated contracting officer representative authority may not be construed to include the authority to execute or to agree to any modification of the contract nor to attempt to resolve any contract dispute concerning a question of fact arising under the contract.

§ 719.41 What information must be forwarded to the General Counsel's Office concerning contractor submissions to Department counsel under this part?

Department counsel must submit through the General Counsel reporting system, the approved costs and status updates for all matters involving retained counsel, including but not limited to contractor litigation. The reports are to be received by the 15th day of the month following the end of each quarter of the fiscal year.

§ 719.42 What types of field actions must be coordinated with Headquarters?

(a) Requests from contractors for exception from this entire part must be coordinated with Headquarters.

(b) Requests from contractors for approval to initiate or defend litigation, or to appeal from adverse decisions, where legal issues of first impression, sensitive issues, issues of significance to the Department nationwide or issues of broad applicability to the Government that might adversely impact its operations are involved must be coordinated by Department counsel with the Deputy General Counsel for Litigation or his/her designee.

(c) Department field counsel must inform the General Counsel of any significant matter, as defined in this part, and must coordinate any action involving a significant matter with the General Counsel, or his/her designee, as directed by the General Counsel or his/her designee.

Appendix to Part 719—Guidance for Legal Resource Management

Management and Administration of Outside Legal Services

Management and Administration of Outside Legal Services

This guidance is intended to assist contractors and the Department's contracting officers and counsel in managing the costs of outside legal services. This guidance is also intended to assist retained legal counsel who provide services to the Department or to the Department's contractors.

1.0 Initiation of Litigation

(A) The Insurance—Litigation and Claims clause (48 CFR (DEAR) 952.228–1 and 970.5204–31) in the Department's facility management contracts provides that the contractor may not initiate litigation, including appeals from adverse decisions, without the prior authorization or approval of the Department's contracting officer, who must consult with Department counsel. The following are the minimum informational requirements for requests for authorization or approval under that clause:

(1) Identification of the proposed parties;
(2) The nature of the proposed action;
(3) Relief sought;
(4) Venue;
(5) Proposed representation and reason for selection;
(6) An analysis of the issues and the likelihood of success, and any time limitation associated with the requested approval;
(7) The estimated costs associated with the proposed action, including whether outside counsel has agreed to a contingent fee arrangement;
(8) Whether, for any reason, the contractor will assume any part of the costs of the action;
(9) A description of any attempts to resolve the issues that would be the subject of the litigation, such as through mediation or other means of alternative dispute resolution; and
(10) A discussion of why initiating litigation would prove beneficial to the contractor and to the Government.

(B) Department counsel should advise the contracting officer concerning each request and must provide assistance to the contracting officer in communicating the Department's decision to the contractor.

2.0 Defense of Litigation

(A) In accordance with the Insurance-Litigation and Claims clause, the contractor must immediately notify Department counsel of the initiation of litigation against the contractor. Department counsel will advise the contractor as to:

(1) Whether the defense of the litigation will be either approved or disapproved or approval deferred and any conditions to which approval is subject;
(2) Whether the contractor will be required to authorize the Government to defend the action;
(3) Whether the Government will take charge of the action; or
(4) Whether the Government will receive an assignment of the contractor's rights.

(B) When defensive litigation is approved at a later stage or at the conclusion of the matter, reimbursement will be made for only those expenses which would have been reimbursable as allowable costs if the

Department had originally approved the defense of the litigation.

2.1 Disapproval of Defensive Litigation

If the Department disapproves in advance the costs of defense of the litigation, the contractor will be notified of the disapproval and that contract funds may not be used to fund the defense of the litigation. The contractor will also be informed if the Department changes its position. Contractor compliance with these policies and procedures will not itself obligate the Department to reimburse litigation costs or judgment costs when Departmental approval of the litigation cost has been denied or deferred.

3.0 Notice to the Department of Special Interest Matters and Litigation

The contractor's procedures under its Legal Management Plan should include provisions for earliest possible notification to the Department of the likely initiation of any ''significant matters'' such as class actions, cases involving radiation or toxic substance exposure, cases involving problems concerning the safeguarding of classified information, and any other matters involving issues which the contractor has reason to believe are of general importance to the Department or the government as a whole.

4.0 Alternative Dispute Resolution

Contractors are expected to evaluate all matters for appropriate alternative dispute resolution (ADR) at various stages of an issue in dispute, e.g., before a case is filed, pre-discovery, after initial discovery and pre-trial. This evaluation should be done in coordination with the Department's ADR liaison if one has been established or appointed or the Department counsel if an ADR liaison has not been appointed. Contractors, contractor counsel, and Department counsel are also encouraged to consult with the Department's Director of the Office of Dispute Resolution. The Department anticipates that mediation will be the principal and most common method of alternative dispute resolution. In exceptional circumstances, arbitration may be appropriate. However, agreement to arbitrate should generally be consistent with the Administrative Dispute Resolution Act (incorporated in part at 5 U.S.C. 571, et seq.) and Department guidance issued under that Act. When a decision to arbitrate is made, a statement fixing the maximum award amount should be agreed to in advance by the participants.

5.0 Cost Allowability Issues

A determination of cost reasonableness may depend on a variety of considerations and circumstances. In accordance with 48 CFR (FAR) 31.201–3, no presumption of reasonableness is attached to the incurrence of costs by a contractor. 10 CFR part 719 and this Appendix provide contractors guidelines for incurring legal costs to which adherence should result in a determination of allowability if the cost is otherwise allowable under the contract.

5.1 Underlying Cause for Incurrence of Costs

While 10 CFR part 719 provides procedures for incurring legal costs, the determination of the reason for the incurrence of the legal costs, e.g., liability, fault or avoidability, is a separate determination. This latter determination may involve, for example, a possible finding of willful misconduct or lack of good faith by contractor management in the case of third party liability, or a finding of violation of a statute or regulation by the contractor in a governmental proceeding. The reason for the contractor incurring costs may be determinative of the allowability of the contractor's legal costs. For example, legal costs incurred by a contractor in defending actions brought by governmental agency may be covered by the Major Fraud Act, 41 U.S.C. 256(k), implemented as a cost principle at 48 CFR (FAR) 31.205–47. In such cases, the statute may restrict the Department's authority to reimburse legal costs incurred by the contractor regardless of the outcome of the action.

(B) In some cases, the final determination of allowability of legal costs cannot be made until a matter is fully resolved. This is particularly true in the case of legal defense costs covered by the restrictions in the Major Fraud Act and is also a common problem in cases covered by various whistleblower statutes and regulations. In certain circumstances, contract and cost principle language may permit conditional reimbursement of costs pending the outcome of the legal matter. Whether the Department makes conditional reimbursements or withholds any payment pending the outcome, legal costs ultimately reimbursed by the Department must satisfy the standards of cost reasonableness.

5.2 Fees and Other Charges

(A) Requests by retained legal counsel that are not in a direct contract with the Department for fee increases should be sent in writing to the contractor, who should review the request for reasonableness. If the contractor determines the request is reasonable, the contractor should seek approval for the request from Department counsel and the contracting officer before it authorizes any increase. Contractors should attempt to lock in rates for partners, associates and paralegals for at least a two-year period.

(B) Rate and fee structures for retained legal counsel should include all ''overhead'' and ''profit,'' and, therefore, any additional overhead or profit charged by retained legal counsel should be considered unreasonable. Costs listed in 10 CFR 719.33(c) are usually incorporated into the rate or fee structure. Consultants or experts hired by retained legal counsel who do not include any overhead or similar charges, such as computer time, in their base rate, must have those charges approved in advance by Department counsel and the contracting officer. Time charged by law students should be scrutinized for its efficiency and have prior authorization.

(C) Travel time may be reimbursed at a full rate for the portion of time during which retained legal counsel actually performs work for which it was retained; any remaining travel time during normal working hours shall be reimbursed at 50 percent, except that in no event is travel time for time during which work was performed for other clients reimbursable. Also, for long distance travel that could be completed by various methods of transportation, *i.e.*, car, train, or plane, only the charge for the overall fastest travel time will be considered reasonable.

(D) For costs associated with the creation and use of computerized databases, contractors and retained legal counsel must ensure that the creation and use of computerized databases is necessary and cost-effective. Potential use of databases originally created by the Department or its contractors for other purposes, but that can be used to assist a contractor or retained legal counsel in connection with a particular matter, should be considered and be coordinated with Department counsel.

6.0 Role of Department Counsel as the Contracting Officer's Representative

(A) An attorney from the field office or from Headquarters will be appointed a contracting officer's representative by the cognizant contracting officer. A contracting officer may designate other Government personnel to act as authorized representatives for functions not involving a change in the scope, price, terms or conditions of the contract. This designation is made in writing and contains specific instructions regarding the extent to which the representatives may take action for the contracting officer, and will prohibit the representative from signing contractual documents. The contracting officer is the only person authorized to approve changes in any of the requirements under the contract.

(B) Additional discussion of the authority and limitation of contracting officers can be found at 48 CFR (FAR) 1.602–1, and for contracting officer's representatives at 48 CFR (DEAR) 942.270–1. A recently standardized clause, Technical Direction, 48 CFR (DEAR) 952.242–70, also discusses the responsibilities and limitations of a contracting officer's representative.

7.0 Future Amendments to Guidance

The Office of the General Counsel may by memorandum provide additional guidance to contractors. These memoranda will serve as guidance for ''safe harbor'' practices for contractors procuring outside legal services.

Attachment—Contractor Litigation and Legal Costs, Model Bill Certification and Format

1. Certification

Bills or invoices should contain a certification signed by a representative of the retained legal counsel to the effect that:

''Under penalty of law, [the representative] acknowledges the expectation that the bill will be paid by the contractor and that the contractor will be reimbursed by the Federal Government through the U.S. Department of Energy, and, based on personal knowledge and a good faith belief, certifies that the bill is truthful and accurate, and that the services and charges set forth herein comply with the terms of engagement and the policies set forth in the Department of Energy's regulation and guidance on contractor legal management requirements, and that the costs and charges set forth herein are necessary.''

2. Model Bill Format

I. FOR FEES

Date of service	Description of service (see note 1 below)	Name or initials of attorney	Approved rate	Time charged	Amount (rate × time)

II. FOR DISBURSEMENTS

Date	Description of disbursement (see note 2 below)	Amount

Note 1—Description of Service: All fees must be itemized and described in sufficient detail and specificity to reflect the purpose and nature of the work performed (*e.g.*, subject matter researched or discussed; names of participants of calls/meetings; type of documents reviewed).

Note 2—Description of Disbursement: Description should be in sufficient detail to determine that the disbursement expense was in accordance with all applicable Department policies on reimbursement of contractor legal costs and the terms of engagement between the contractor and the retained legal counsel. The date the expense was incurred or disbursed should be listed rather than the date the expense was processed. The following should be itemized: copy charge (i.e., number of pages times a maximum of 10 cents per page); fax charges (date, phone number and actual amount); overnight delivery (date and amount); electronic research (date and amount); extraordinary postage (*i.e.*, bulk or certified mail); court reporters; expert witness fees; filing fees; outside copying or binding charges; temporary help (assuming prior approval).

Note 3—Receipts: Receipts for all expenses equal to or above $75 must be attached.

2. The authority citation for Parts 928 and 952 continues to read as follows:

Authority: 42 U.S.C. 7101, *et seq.*; 40 U.S.C. 486(c); 50 U.S.C. 2401, *et seq.*; 42 U.S.C. 2201.

PART 928—BONDS AND INSURANCE

3. Section 928.311–2 is added to read as follows:

§ 928.311–2 Agency solicitation provisions and contract clauses. (Department coverage—paragraph (b)).

(b) Cost reimbursement contracts for an amount exceeding $10,000,000, involving work performed at facilities owned or leased by the Department, must use the clause at 952.228–1.

4. Part 944 is added to read as follows:

PART 944—SUBCONTRACTING POLICIES AND PROCEDURES

Authority: 42 U.S.C. 7101 *et seq.*; 40 U.S.C. 486(c); 50 U.S.C. 2401 *et seq.*; 42 U.S.C. 2201.

§ 944.102 Policy. (Department coverage—paragraph (c)).

(c) Contractor purchases of litigation and other legal services are subject to the requirements in 10 CFR part 719 and this part 944 of 48 CFR (DEAR).

PART 952—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

5. Section 952.228–1 is added to read as follows:

§ 952.228–1 Insurance—Litigation and Claims.

As prescribed at 928.311–2(b), insert the clause at 970.5204–31. The contracting officer shall substitute these paragraphs of the clause:

(e) (2) For liabilities (and reasonable expenses incidental to such liabilities, including litigation costs) to third persons not compensated by insurance or otherwise without regard to and as an exception to the limitation of cost or limitation of funds clause of this contract.

(h) In addition to the cost reimbursement limitations contained in FAR 31.201–3 and DEAR 931.205–33, and notwithstanding any other provision of this contract, the contractor's liabilities to third persons, including employees but excluding costs incidental to workers' compensation actions, (and any expenses incidental to such liabilities, including litigation costs, counsel fees, judgments and settlements) shall not be reimbursed if such liabilities were caused by contractor managerial personnel's.

(j) (4) The term ''contractor's managerial personnel'' is defined in the Property clause in this contract.

PART 970—DOE MANAGEMENT AND OPERATING CONTRACTS

6. The authority citation for Part 970 continues to read as follows:

Authority: Atomic Energy Act of 1954 (42 U.S.C. 2201); Department of Energy Organization Act (42 U.S.C. 7101, *et seq.*); and National Nuclear Security Administration Act (50 U.S.C. 2401, *et seq.*)

7. Section 970.5204–31 is amended by adding clause paragraph (m) to read as follows:

§ 970.5204–31 Insurance—litigation and claims.

* * * * *

(m) Reasonable litigation and other legal expenses are allowable when incurred in accordance with 10 CFR part 719, Contractor Legal Management Requirements, which includes a requirement to submit a Legal Management Plan within 60 days of execution of a contract, and if not otherwise made unallowable by law or the provisions of this contract.

10. Section 970.7103 is amended by adding paragraph (e) to read as follows:

§ 970.7103 Contractor purchasing system.

* * * * *

(e) Contractor purchases of litigation and other legal services are subject to the requirements in10 CFR part 719, 48 CFR (FAR) part 44 and this subpart, 48 CFR (DEAR) 970.71.

[FR Doc. 00–26995 Filed 10–24–00; 8:45 am]
BILLING CODE 6450–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NM–214–AD]

RIN 2120–AA64

Airworthiness Directives; Airbus Model A310 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to all Airbus Model A310 series airplanes. This proposal would require repetitive detailed visual inspections to detect cracks propagating from the fastener holes that attach the left- and right-hand pick-up angles at frame 40 to the wing lower skin and fuselage panel, and

corrective actions, if necessary. This action is necessary to prevent reduced structural integrity of the airplane due to fatigue damage and consequent cracking of the pick-up angles at frame 40. This action is intended to address the identified unsafe condition.

DATES: Comments must be received by November 24, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–214–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227–1232. Comments may also be sent via the Internet using the following address: 9-anm-nprmcomment@faa.gov. Comments sent via fax or the Internet must contain ''Docket No. 2000–NM–214–AD'' in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

The service information referenced in the proposed rule may be obtained from Airbus Industrie, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington.

FOR FURTHER INFORMATION CONTACT: Norman B. Martenson, Manager, International Branch, ANM–116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–2110; fax (425) 227–1149.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this action may be changed in light of the comments received.

Submit comments using the following format:

- Organize comments issue-by-issue. For example, discuss a request to change the compliance time and a request to change the service bulletin reference as two separate issues.
- For each issue, state what specific change to the proposed AD is being requested.
- Include justification (*e.g.,* reasons or data) for each request.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 2000–NM–214–AD.'' The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–214–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

The Direction Générale de l'Aviation Civile (DGAC), which is the airworthiness authority for France, notified the FAA that an unsafe condition may exist on all Airbus Model A310 series airplanes. The DGAC advises that, during unscheduled inspections of these airplanes, structural damage was found on the pick-up angles at the junction between the wing lower surface and the fuselage skin at frame 40. Investigation revealed that the maintenance requirements defined currently for Structural Significant Item (SSI) 57–10–19 in the A310 Airworthiness Limitations Items (ALI's) in Revision 2 of the A310 Maintenance Review Board (MRB) report are not sufficient to detect fatigue damage in a timely manner. Such fatigue damage could result in cracking of the pick-up angles at frame 40. This condition, if not corrected, could result in reduced structural integrity of the airplane.

Explanation of Relevant Service Information

Airbus has issued Service Bulletin A310–53A2111, Revision 01, dated June 21, 2000. The service bulletin describes procedures for repetitive detailed visual inspections to detect cracks propagating from the fastener holes that attach the left- and right-hand pick-up angles at frame 40 to the wing lower skin and fuselage panel, and corrective actions, if necessary. The corrective actions include repair (drilling and reaming a crack stop hole in the pick-up angle, performing a Rototest inspection and repetitive detailed visual inspections, and replacing the pick-up angle with a new angle); or immediate replacement of any cracked angle with a new angle; as applicable. The DGAC classified this service bulletin as mandatory and issued French airworthiness directive 2000–209–310(B), dated June 14, 2000, in order to assure the continued airworthiness of these airplanes in France.

FAA's Conclusions

This airplane model is manufactured in France and is type certificated for operation in the United States under the provisions of § 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Pursuant to this bilateral airworthiness agreement, the DGAC has kept the FAA informed of the situation described above. The FAA has examined the findings of the DGAC, reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of the same type design registered in the United States, the proposed AD would require accomplishment of the actions specified in the service bulletin described previously.

Cost Impact

The FAA estimates that 47 airplanes of U.S. registry would be affected by this proposed AD, that it would take approximately 2 work hours per airplane to accomplish the proposed inspection, and that the average labor rate is $60 per work hour. Based on these figures, the cost impact of the proposed AD on U.S. operators is estimated to be $5,640, or $120 per airplane, per inspection cycle.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations proposed herein would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this proposed regulation (1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

Airbus Industrie: Docket 2000–NM–214–AD.

Applicability: All Model A310 series airplanes, certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent reduced structural integrity of the airplane due to fatigue damage and consequent cracking of the pick-up angles at frame 40, accomplish the following:

Inspections and Corrective Actions

(a) Perform a detailed visual inspection to detect cracks propagating from the fastener holes that attach the left-and right-hand pick-up angles at frame 40 to the wing lower skin and fuselage panel, at the time specified in paragraph (b), (c), (d), (e) or (f) of this AD, as applicable. Perform the actions in accordance with Figure 2, Sheet 1, ''Synoptic Chart,'' of Airbus Service Bulletin A310–53A2111, Revision 01, dated June 21, 2000.

(1) If no cracking is found during the inspection required by paragraph (a) of this AD, repeat the detailed visual inspection thereafter at the interval specified in paragraph (a)(1)(i) or (a)(1)(ii) of this AD, as applicable.

(i) For Model A310–200 series airplanes: Except as provided by paragraph (d) of this AD, repeat the inspection thereafter at intervals not to exceed 1,000 flight cycles or 2,600 flight hours, whichever occurs first.

(ii) For Model A310–300 series airplanes: Except as provided by paragraph (d) of this AD, repeat the inspection thereafter at intervals not to exceed 850 flight cycles or 2,800 flight hours, whichever occurs first.

(2) If any cracking is found during the inspection required by paragraph (a) of this AD, prior to further flight, perform applicable corrective actions [including repair (drilling and reaming a crack stop hole in the pick-up angle, performing a Rototest inspection and repetitive detailed visual inspections at the time specified in the service bulletin, and replacing the pick-up angle with a new angle at the time specified in the service bulletin); or immediate replacement of any cracked angle with a new angle]. Perform the actions and repetitive inspections in accordance with Figure 2, Sheet 1, ''Synoptic Chart,'' of Airbus Service Bulletin A310–53A2111, Revision 01, dated June 21, 2000.

Note 2: Accomplishment of the actions required by paragraph (a) of this AD in accordance with Airbus Service Bulletin A310–53A2111, dated April 21, 2000, is considered to be acceptable for compliance with the requirements of that paragraph.

Compliance Times

(b) For Model A310–200 series airplanes: Except as provided by paragraphs (d), (e), and (f) of this AD, perform the initial inspection at the later of the times specified in paragraphs (b)(1) and (b)(2) of this AD.

(1) Prior to the accumulation of 7,900 total flight cycles or 23,600 total flight hours, whichever occurs first.

(2) Within 700 flight cycles or 1,200 flight hours after the effective date of this AD, whichever occurs first.

(c) For Model A310–300 series airplanes: Except as provided by paragraphs (d), (e), and (f) of this AD, perform the initial inspection required by paragraph (a) of this AD at the later of the times specified in paragraphs (c)(1) and (c)(2) of this AD.

(1) Prior to the accumulation of 6,700 total flight cycles or 24,700 total flight hours, whichever occurs first.

(2) Within 700 flight cycles or 1,200 flight hours after the effective date of this AD, whichever occurs first.

(d) For airplanes that have accumulated more than 18,000 total flight cycles or 53,000 total flight hours as of the effective date of this AD: Perform the initial inspection required by paragraph (a) of this AD within 350 flight cycles or 600 flight hours after the effective date of this AD, whichever occurs first. Repeat the inspection thereafter at intervals not to exceed 350 flight cycles or 600 flight hours, whichever occurs first.

(e) For airplanes having manufacturer's serial number 0162 through 0326 inclusive, on which Airbus Service Bulletin A310–53–2014 has been accomplished prior to the effective date of this AD: The initial inspection threshold may be counted from the date of accomplishment of Airbus Service Bulletin A310–53–2014.

(f) For airplanes on which a pick-up angle has been replaced: For that pick-up angle only, the initial inspection threshold may be counted from the date of installation of the new pick-up angle.

Note 3: For the purposes of this AD, a detailed visual inspection is defined as: ''An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required.''

Alternative Methods of Compliance

(g) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, International Branch, ANM–116, FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, International Branch, ANM–116.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the International Branch, ANM–116.

Special Flight Permits

(h) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Note 5: The subject of this AD is addressed in French airworthiness directive 2000–209–310(B), dated June 14, 2000.

Issued in Renton, Washington, on October 19, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–27432 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 00–AAL–5]

Proposed Revision of Class E Airspace; Gulkana, AK

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This action revises Class E airspace at Gulkana, AK. The establishment of two new Area Navigation (RNAV) instrument approaches and the revision of the Very High Frequency (VHF) Omni-directional Radio Range (VOR) and Non-directional Radio Beacon (NDB) instrument approaches to runway (RWY) 14 and RWY 32 at Gulkana Airport, Gulkana, AK, have made this action necessary. Adoption of this proposal would result in the provision of adequate controlled airspace for Instrument Flight Rules (IFR) operations at Gulkana, AK.

DATES: Comments must be received on or before December 11, 2000.

ADDRESSES: Send comments on the proposal in triplicate to: Manager, Operations Branch, AAL–530, Docket No. 00–AAL–5, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587.

The official docket may be examined in the Office of the Regional Counsel for the Alaskan Region at the same address.

An informal docket may also be examined during normal business hours in the Office of the Manager, Operations Branch, Air Traffic Division, at the address shown above and on the Internet at Alaskan Region's homepage at http://www.alaska.faa.gov/at or at address http://162.58.28.41/at.

FOR FURTHER INFORMATION CONTACT: Robert van Haastert, Operations Branch, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587; telephone number (907) 271–5863; fax: (907) 271–2850; email: Robert.ctr.van-Haastert@faa.gov. Internet address: http://www.alaska.faa.gov/at or at address http://162.58.28.41/at.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify the airspace docket number and be submitted in triplicate to the address listed above. Commentors wishing the FAA to acknowledge receipt of their comments on this action must submit with those comments a self-addressed, stamped postcard on which the following statement is made: ''Comments to Airspace Docket No. 00–AAL–5.'' The postcard will be date/time stamped and returned to the commentor. All communications received on or before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this action may be changed in light of comments received. All comments submitted will be available for examination in the Operations Branch, Air Traffic Division, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of Notice of Proposed Rulemaking's (NPRM's)

An electronic copy of this document may be downloaded, using a modem and suitable communications software, from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703–321–3339) or the **Federal Register**'s electronic bulletin board service (telephone: 202–512–1661).

Internet users may reach the **Federal Register**'s web page for access to recently published rulemaking documents at http://www.access.gpo.gov/su_docs/aces/aces140.html.

Any person may obtain a copy of this NPRM by submitting a request to the Operations Branch, AAL–530, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587. Communications must identify the docket number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should contact the individual(s) identified in the **FOR FURTHER INFORMATION CONTACT** section.

The Proposal

The FAA proposes to amend 14 CFR part 71 by revising Class E airspace at Gulkana, AK, due to the establishment of two new RNAV instrument approaches and revision of the VOR and NDB instrument approach procedures to RWY 14 and RWY 32. The intended effect of this proposal is to provide additional controlled airspace for IFR operations at Gulkana, AK.

The area would be depicted on aeronautical charts for pilot reference. The coordinates for this airspace docket are based on North American Datum 83. The Class E airspace areas designated as Surface Areas are published in paragraph 6002 and the Class E airspace areas extending upward from 700 feet or more above the surface of the Earth are published in paragraph 6005 in FAA Order 7400.9H, *Airspace Designations and Reporting Points,* dated September 1, 2000, and effective September 16, 2000, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document would be published subsequently in the Order.

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, CLASS B, CLASS C, CLASS D, AND CLASS E AIRSPACE AREAS; AIRWAYS; ROUTES; AND REPORTING POINTS

1. The authority citation for 14 CFR part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

2. The incorporation by reference in 14 CFR 71.1 of Federal Aviation Administration Order 7400.9H, *Airspace Designations and Reporting Points*, dated September 1, 2000, and effective September 16, 2000, is amended as follows:

* * * * *

Paragraph 6002 Class E airspace designated as surface areas.

* * * * *

AAL AK E2 Gulkana, AK [Revised]

Gulkana Airport, AK
(Lat. 62°09′18″ N., long. 145°27′24″ W.)
Gulkana VORTAC
(Lat. 62°09′08″ N., long. 145°27′01″ W.)
Glenallen NDB
(Lat. 62°11′43″ N., long. 145°28′05″ W.)

That airspace extending upward from the surface to and including 4,100 feet MSL within a 4 mile radius of the Gulkana Airport, and within 2.8 miles west of the Gulkana VORTAC 344° radial clockwise to 2.8 miles east of the 352° radial extending from the Gulkana airport to 9.4 miles north of the airport, and within 2.5 miles east of the Gulkana VORTAC 172° radial clockwise to 2.5 miles west of the Gulkana 180° radial extending from the Gulkana airport to 7 miles south of the Gulkana airport. This airspace is effective during specific dates and times established in advance by Notice to Airmen. The effective dates and times will thereafter be continuously published in the Airport/Facility Directory.

* * * * *

Paragraph 6005 Class E airspace extending upward from 700 feet or more above the surface of the earth.

* * * * *

AAL AK E5 Gulkana, AK [Revised]

Gulkana Airport, AK
(Lat. 62°09′18″ N., long. 145°27′24″ W.)
Gulkana VORTAC
(Lat. 62°09′08″ N., long. 145°27′01″ W.)
Glenallen NDB
(Lat. 62°11′43″ N., long. 145°28′05″ W.)

That airspace extending upward from 700 feet above the surface within 6.5-mile radius of the Gulkana airport and within 8 miles west of the Gulkana VORTAC 344° radial, clockwise to 4 miles east of the 352° radial extending from the Gulkana airport to 16 miles north of the Gulkana airport, and within 4 miles east of the Gulkana VORTAC 172° radial clockwise to 4 miles west of the Gulkana VORTAC 180° radial extending 9.5 miles south of the Gulkana airport; and that airspace extending upward from 1,200 feet above the surface within an area bounded by lat. 62°35′00″ N long. 145°39′30″ W, counter clockwise to lat. 62°02′00″ N long. 146°30′00″ W, to lat 61°41′30″ N long. 145°13′00″ W, to lat. 62°22′30″ N long. 144°27′00″ W, to the point of beginning.

* * * * *

Issued in Anchorage, AK, on October 6, 2000.

Joseph F. Woodford,

Acting Manager, Air Traffic Division, Alaskan Region.

[FR Doc. 00–26821 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 00–AAL–17]

Proposed Revision of Class E Airspace; Iliamna, AK

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This action revises Class E airspace at Iliamna, AK. The establishment of Area Navigation (RNAV) instrument approaches to runway (RWY) 7, RWY 25, RWY 17, and RWY 35 at Iliamna Airport, Iliamna, AK, have made this action necessary. Adoption of this proposal would result in the provision of adequate controlled airspace for Instrument Flight Rules (IFR) operations at Iliamna, AK.

DATES: Comments must be received on or before December 11, 2000.

ADDRESSES: Send comments on the proposal in triplicate to: Manager, Operations Branch, AAL–530, Docket No. 00–AAL–17, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587.

The official docket may be examined in the Office of the Regional Counsel for the Alaskan Region at the same address.

An informal docket may also be examined during normal business hours in the Office of the Manager, Operations Branch, Air Traffic Division, at the address shown above and on the Internet at Alaskan Region's homepage at http://www.alaska.faa.gov/at or at address http://162.58.28.41/at.

FOR FURTHER INFORMATION CONTACT: Bob Durand, Operations Branch, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587; telephone number (907) 271–5898; fax: (907) 271–2850; email: Bob.Durand@faa.gov. Internet address: http://www.alaska.faa.gov/at or at address http://162.58.28.41/at.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify the airspace docket number and be submitted in triplicate to the address listed above. Commentors wishing the FAA to acknowledge receipt of their comments on this action must submit with those comments a self-addressed, stamped postcard on which the following statement is made: ''Comments to Airspace Docket No. 00–AAL–17.'' The postcard will be date/time stamped and returned to the commentor. All communications received on or before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this action may be changed in light of comments received. All comments submitted will be available for examination in the Operations Branch, Air Traffic Division, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of Notice of Proposed Rulemaking's (NPRM's)

An electronic copy of this document may be downloaded, using a modem and suitable communications software, from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703–321–3339) or the Federal Register's electronic bulletin board service (telephone: 202–512–1661).

Internet users may reach the Federal Register's web page for access to recently published rulemaking documents at http://www.access.gpo.gov/su_docs/aces/aces140.html.

Any person may obtain a copy of this NPRM by submitting a request to the Operations Branch, AAL–530, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513–7587. Communications must identify the docket number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should contact the individual(s) identified in the FOR FURTHER INFORMATION CONTACT section.

The Proposal

The FAA proposes to amend 14 CFR part 71 by revising Class E airspace at Iliamna, AK, due to the establishment of RNAV instrument approach procedures to RWY 7, RWY 25, RWY 17, and RWY 35. The intended effect of this proposal is to provide additional controlled airspace for IFR operations at Iliamna, AK.

The area would be depicted on aeronautical charts for pilot reference. The coordinates for this airspace docket are based on North American Datum 83. The Class E airspace areas designated as surface areas are published in paragraph 6002 and Class E airspace areas extending upward from 700 feet or more above the surface of the earth are published in paragraph 6005 in FAA Order 7400.9H, *Airspace Designations and Reporting Points,* dated September 1, 2000, and effective September 16, 2000, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document would be published subsequently in the Order.

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71— DESIGNATION OF CLASS A, CLASS B, CLASS C, CLASS D, AND CLASS E AIRSPACE AREAS; AIRWAYS; ROUTES; AND REPORTING POINTS

1. The authority citation for 14 CFR part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

2. The incorporation by reference in 14 CFR 71.1 of Federal Aviation Administration Order 7400.9H, *Airspace Designations and Reporting Points,* dated September 1, 2000, and effective September 16, 2000, is amended as follows:

* * * * *

Paragraph 6002 Class E airspace designated as surface areas.

* * * * *

AAL AK E2 Iliamna, AK [Revised]

Iliamna Airport, AK
(Lat. 59°45′16″ N., long. 154°54′39″ W.)
Iliamna NDB
(Lat. 59°44′53″ N., long 154° 54′35″ W.)

Within a 4-mile radius of the Iliamna Airport and within 2.5 miles east of the 189° bearing and 2.5 miles west of the 200° bearing from the Iliamna NDB extending from the 4-mile radius to 7.4 miles south of the airport. This Class E airspace area is effective during specific dates and times established in advanced by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Supplement Alaska (Airport/Facility Directory).

* * * * *

Paragraph 6005 Class E airspace extending upward from 700 feet or more above the surface of the earth.

* * * * *

AAL AK E5 Iliamna, AK [Revised]

Iliamna Airport, AK
(Lat. 59°45′16″ N., long. 154°54′39″ W.)
Iliamna NDB
(Lat. 59°44′53″ N., long 154°54′35″ W.)

That airspace extending upward from 700 feet above the surface within a 6.4-mile radius of the Iliamna Airport and within 4 miles west and 8 miles east of the 200° bearing from the Iliamna NDB extending from the 6.4-mile radius to 16 miles south from the NDB; and that airspace extending from 1,200 feet above the surface within an area bounded by lat. 60°14′00″ N long. 154°54′00″ W, clockwise to lat. 59°46′20″ N long. 153°52′00″ W, to lat. 59°43′00″ N long. 153°00′00″ W, lat. 59°33′00″ N long. 153°00′00″ W, lat. 59°28′00″ N long. 154°13′00″ W, lat. 59°18′00″ N long. 154°04′00″ W, lat. 59°11′00″ N long. 155°17′00″ W, lat. 59°32′00″ N long. 155°31′00″ W, lat. 59°41′00″ N long. 156°35′00″ W, to the point of beginning.

* * * * *

Issued in Anchorage, AK, on October 6, 2000.

Joseph F. Woodford,

Acting Manager, Air Traffic Division, Alaskan Region.

[FR Doc. 00–26819 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

21 CFR Part 1313

[DEA–197P]

RIN 1117–AA53

Waiver of Advance Notification Requirement to Import Acetone, 2-Butanone (MEK), and Toluene

AGENCY: Drug Enforcement Administration (DEA), Justice.

ACTION: Proposed Rule.

SUMMARY: DEA is proposing the amendment of its regulations to waive the advance notification requirement to import the solvents acetone, 2-Butanone (MEK), and toluene, which DEA regulates as List I chemicals. DEA has determined that the advance notification requirement is not necessary for these chemicals for chemical diversion control. DEA currently receives, on average, 2000 advance notifications per year to import these solvents. This change will now require only the submission of 400 summary reports annually. This change to the regulations will ease regulatory burdens for the regulated industry and administrative burdens for DEA.

DATES: Written comments must be submitted on or before December 26, 2000.

ADDRESSES: Comments should be submitted in triplicate to the Deputy Assistant Administrator, Office of Diversion Control, Drug Enforcement Administration, Washington, DC 20537, Attention: DEA Federal Register Representative/CCR.

FOR FURTHER INFORMATION CONTACT: Patricia M. Good, Chief, Liaison and

Policy Section, Office of Diversion Control, Drug Enforcement Administration, Washington, DC 20537, telephone (202) 307–7297.

SUPPLEMENTARY INFORMATION:

What Is the Impact of This Proposed Rule?

The intent of the chemical control provisions of the Controlled Substances Act (CSA) is to curb the diversion of regulated chemicals to the illicit manufacture of controlled substances. This diversion can occur through distribution, importation and exportation of these chemicals. One of the principal components of chemical control with respect to imports and exports is the requirement that advance notification be provided to DEA prior to an importation or exportation of a listed chemical (21 U.S.C. 971). This advance notification allows DEA an opportunity to review the transaction and determine whether it might result in diversion of the chemical to the illicit manufacture of a controlled substance. The advance notification requirement is conditioned by the provision that DEA can waive the requirement for imports or exports of listed chemicals for which the Administrator determines that such advance notification is not necessary for effective chemical diversion control (21 U.S.C. 971(e)(3), 21 CFR 1313.12(c)(2) and 21 CFR 1313.21(c)(2)). DEA has determined that the advance notification requirement for imports of acetone, 2-Butanone (MEK), and toluene (the solvents) is not necessary for effective chemical diversion control. Therefore, pursuant to its authority under 21 U.S.C. 971(e)(3), DEA is proposing to amend 21 CFR 1313.12 to waive the 15-day advance notification requirement for these transactions.

Why Is DEA Proposing To Waive the Advance Notification Requirement for Importation of Acetone, 2-Butanone (MEK), and Toluene?

Acetone, 2-Butanone (MEK) and toluene are widely used as industrial chemicals in the United States. DEA found between 1996 and 1999 that approximately two thirds of all chemical imports reported to DEA were for these three listed chemicals.

The principal concern for DEA in regard to these solvents is their use in the illicit manufacture of cocaine. Cocaine is manufactured overseas; at this time, it is not manufactured in the United States. Diversion of these solvents for illegal manufacture of controlled substances has not been identified as a significant problem in the United States. Therefore, DEA's concerns have focused on the exportation of these solvents to cocaine producing regions and DEA has determined that control of imports of these solvents through the advance notification requirement is not necessary for effective chemical diversion control.

With waiver of the advance notification requirement, importers of acetone, 2-Butanone (MEK) and toluene will not be required to submit individual DEA Form 486s in advance of each importation. Instead, importers will submit summary quarterly reports of all import transactions as described in 21 CFR 1313.12(e) pursuant to 21 U.S.C. 971(e)(3).

Technical Corrections to the Regulations

While preparing this proposed rule, DEA noted the following technical corrections in this part of the CFR for which amendments are being proposed. DEA is taking this opportunity to make these technical corrections.

In 21 CFR 1313.12(b) and 21 CFR 1313.21(b) the reference to the ''Drug Control Section'' is being changed to the ''Chemical Control Section'' to reflect organizational changes within DEA. In 21 CFR 1313.21(e), the text noting that no DEA Form 486 is required for exportations subject to 21 CFR 1313.21(c)(2) was inadvertently omitted. This text has been reinserted. Further, an error occurred in 21 CFR 1313.21(e) relating to exports where the word ''importation'', rather than the word ''exportation'', was inadvertently used in the sentence: ''The report shall contain the following information regarding each individual importation:''. The word ''exportation'' will be substituted to correct this error.

Reduction of Regulatory Burden

By proposing these amendments, DEA will be reducing the paperwork burden for the regulated industry. Approximately two thirds of all 15-day advance notifications of importation, on average 2000 advance notifications annually, are for the solvents acetone, 2-Butanone (MEK), and toluene, equating to an initial paperwork burden reduction of 420 hours. In lieu of this paperwork requirement, DEA is requiring that importers of acetone, 2-Butanone (MEK) and toluene complete a quarterly summary report of all transactions. This quarterly summary report is estimated to impose a regulatory burden of 200 hours per year. Therefore, this proposed change creates a net reduction of 220 annual paperwork burden hours for the regulated industry.

Regulatory Certifications

Regulatory Flexibility Act

The Deputy Assistant Administrator hereby certifies that this proposed rulemaking has been drafted in a manner consistent with the principles of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). It will not have a significant economic impact on a substantial number of small business entities. Waiving the 15-day advance notification requirement for imports of acetone, 2-Butanone, and toluene will ease the regulatory burden for the regulated industry.

Executive Order 12866

The Deputy Assistant Administrator further certifies that this proposed rulemaking has been drafted in accordance with the principles in Executive Order 12866 section 1(b). DEA has determined that this is not a significant rulemaking action. This rulemaking will ease regulatory burdens for the regulated industry. Therefore, this action has not been reviewed by the Office of Management and Budget.

Executive Order 12988

This regulation meets the applicable standards set forth in Sections 3(a) and 3(b)(2) of Executive Order 12988—Civil Justice Reform.

Executive Order 13132

This rulemaking does not preempt or modify any provision of state law; nor does it impose enforcement responsibilities on any state; nor does it diminish the power of any state to enforce its own laws. Accordingly, this rulemaking does not have federalism implications warranting the application of Executive Order 13132.

Unfunded Mandates Reform Act of 1995

This rule will not result in the expenditure by state, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more in any one year, and will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

Small Business Regulatory Enforcement Fairness Act of 1996

This rule is not a major rule as defined by Section 804 of the Small Business Regulatory Enforcement Fairness Act of 1996. This rule will not result in an annual effect on the economy of $100,000,000 or more; a major increase in costs or prices; or significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based companies to compete with foreign-based companies in domestic and export markets.

Plain Language Instructions

The Drug Enforcement Administration makes every effort to write clearly. If you have suggestions as to how to improve the clarity of this regulation, call or write Patricia M. Good, Chief, Liaison and Policy Section, Office of Diversion Control, Drug Enforcement Administration, Washington, DC 20537, telephone (202) 307–7297.

List of Subjects in 21 CFR Part 1313

Administrative practice and procedure, Drug traffic control, Exports, Imports, List I and List II chemicals, Reporting and recording requirements.

For the reasons set out above, 21 CFR Part 1313 is proposed to be amended as follows:

PART 1313—[AMENDED]

1. The authority citation for Part 1313 continues to read as follows:

Authority: 21 U.S.C. 802, 830, 871(b), 971.

2. Section 1313.12 is proposed to be amended by revising paragraphs (b) and (f) to read as follows:

§ 1313.12 Requirement of authorization to import.

* * * * *

(b) A completed DEA Form 486 must be received at the following address not later than 15 days prior to the importation: Drug Enforcement Administration, P.O. Box 28346, Washington, DC 20038. A copy of the completed DEA Form 486 may be transmitted directly to the Drug Enforcement Administration, Chemical Control Section, through electronic facsimile media not later than 15 days prior to the importation.

* * * * *

(f) The 15 day advance notification requirement set forth in paragraph (a) has been waived for imports of the following listed chemicals:

(1) Acetone

(2) 2-Butanone (or Methyl Ethyl Ketone or MEK)

(3) Toluene.

3. Section 1313.21 is proposed to be amended by revising paragraphs (b) and (e) to read as follows:

§ 1313.21 Requirement of authorization to export.

* * * * *

(b) A completed DEA Form 486 must be received at the following address not later than 15 days prior to the exportation: Drug Enforcement Administration, P.O. Box 28346, Washington, DC 20038. A copy of the completed DEA Form 486 may be transmitted directly to the Drug Enforcement Administration, Chemical Control Section, through electronic facsimile media not later than 15 days prior to the exportation.

* * * * *

(e) For exportations where advance notification is waived pursuant to paragraph (c)(2) of this section, no DEA Form 486 is required, however, the regulated person shall file quarterly reports to the Drug Enforcement Administration, Chemical Control Section, P.O. Box 28346, Washington, DC 20038, by no later than the 15th day of the month following the end of each quarter. The report shall contain the following information regarding each individual exportation:

* * * * *

Dated: October 12, 2000.

John H. King,

Deputy Assistant Administrator, Office of Diversion Control.

[FR Doc. 00–27426 Filed 10–24–00; 8:45 am]

BILLING CODE 4410–09–U

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Part 1

[REG–117162–99]

RIN 1545–AY23

Tax Treatment of Cafeteria Plans; Correction

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Correction to notice of proposed rulemaking.

SUMMARY: This document contains a correction to proposed regulations that were published in the **Federal Register** on Thursday, March 23, 2000 (65 FR 15587) relating to tax treatment of cafeteria plans.

FOR FURTHER INFORMATION CONTACT: Christine L. Keller, (202) 622–6080 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Background

The notice of proposed rulemaking that is the subject of this correction is under section 125 of the Internal Revenue Code.

Need for Correction

As published, the proposed regulations contain an error that may prove to be misleading and is in need of clarification.

Correction of Publication

Accordingly, the publication of the proposed regulations (REG–117162–99), that were the subject of FR Doc. 00–5818, is corrected as follows:

On page 15587, column 2, the regulation heading in the middle of the column, line 5, the ''RIN 1545–AX59'' is corrected to read ''RIN 1545–AY23''.

Cynthia E. Grigsby,

Chief, Regulations Unit, Office of Special Counsel (Modernization and Strategic Planning).

[FR Doc. 00–27311 Filed 10–24–00; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

31 CFR Part 1

Internal Revenue Service: Privacy Act; Proposed Implementation

AGENCY: Office of the Secretary, Department of the Treasury.

ACTION: Proposed Rule.

SUMMARY: In accordance with the requirements of the Privacy Act of 1974, 5 U.S.C. 552a, as amended, the Department of the Treasury, Internal Revenue Service, gives notice of a proposed amendment to this part to exempt a new system of records, the Third Party Contact Reprisal Records—Treasury/IRS 00.334, from certain provisions of the Privacy Act. The exemptions are intended to comply with the legal prohibitions against the disclosure of certain kinds of information and to protect certain information, about individuals, maintained in this system of records.

DATES: Comments must be received no later than November 24, 2000.

ADDRESSES: Please submit comments to Office of Governmental Liaison and Disclosure, Internal Revenue Service, 1111 Constitution Ave., NW., Washington, DC 20224. Persons wishing to review the comments should call 202–622–6240 to make an appointment with the Office of Governmental Liaison and Disclosure.

FOR FURTHER INFORMATION CONTACT: David Silverman, Tax Law Specialist, 6103/Privacy Operations, Governmental Liaison and Disclosure, Internal Revenue Service at 202–622–3607.

SUPPLEMENTARY INFORMATION: Under 5 U.S.C. 552a(k)(2), the head of an agency may promulgate rules to exempt a system of records from certain provisions of 5 U.S.C. 552a, if the system is investigatory material compiled for law enforcement purposes. The Internal Revenue Service compiles records in this system for law enforcement purposes. The Third Party Contact Reprisal Records—Treasury/IRS 00.334, contains records of third party contacts whose names are not revealed to the taxpayer because 7602(c) provides for an exception to third party contact notification when such notice may involve reprisal against any person.

The Internal Revenue Service is hereby giving notice of a proposed rule to exempt Treasury/IRS, 00.334—Third Party Contact Reprisal Records, from certain provisions of the Privacy Act pursuant to 5 U.S.C. 552a(k)(2). The provisions of the Privacy Act of 1974 from which exemption is claimed is as follows: 5 U.S.C. 552a(c)(3), 5 U.S.C. 552a(d)(1), (2), (3), and (4), 5 U.S.C. 552a(e)(1), 5 U.S.C. 552a(e)(4)(G), 5 U.S.C. 552a(e)(4)(H), 5 U.S.C. 552a(e)(4)(I), 5 U.S.C. 552a(f).

Pursuant to the provisions of 5 U.S.C. 552a(k)(2), it is proposed to exempt Treasury/IRS 00.334—Third Party Contact Reprisal Records, from certain provisions of the Privacy Act of 1974, because the system contains investigatory material compiled for law enforcement purposes. The data will be utilized to enforce 26 U.S.C. 6103 and 7602(c). The following are the reasons why this system of records maintained by the Internal Revenue Service is exempt pursuant to 5 U.S.C. 552a(k)(2) of the Privacy Act of 1974.

(1) 5 U.S.C. 552a(c)(3)

This provision of the Privacy Act provides for the release of the disclosure accounting required by 5 U.S.C. 552a(c)(1) and (2) to the individual named in the record at his/her request. The reasons for exempting this system of records from the foregoing provision are:

(i) Such release may lead to reprisal by the taxpayer against the third party contact or another person if the taxpayer guesses (correctly or incorrectly) who the third party contact was.

(ii) Such release would provide the subject of an investigation with an accurate accounting of the date, nature, and purpose of each disclosure and the name and address of the person or agency to whom the disclosure was made. The release of such information to the subject of an investigation would provide the subject with significant information concerning the nature of the investigation and could result in the altering or destruction of documentary evidence, the improper influencing of witnesses, and other activities that could impede or compromise the investigation.

(iii) Release to the individual of the disclosure accounting would alert the individual as to which agencies were investigating the subject and the scope of the investigation and could aid the individual in impeding or compromising investigations by those agencies.

(2) 5 U.S.C. 552a(d)(1), (d)(2), (d)(3), (d)(4), (e)(4)(G), (H), and (f)

These provisions of the Privacy Act relate to an individual's right to be notified of the existence of records pertaining to such individual; requirements for identifying an individual who requested access to records; the agency procedures relating to access to records and the contest of the information contained in such records and the administrative remedies available to the individual in the event of adverse determinations by an agency concerning access to or amendment of information contained in record systems. The reasons for exempting this system of records from the foregoing provisions are as follows: To notify an individual at the individual's request of the existence of an investigative file pertaining to such individual or grant access to an investigative file could lead to reprisal against the third party contact and/or others; interfere with investigative and enforcement proceedings; deprive co-defendants of a right to a fair trial or an impartial adjudication; constitute an unwarranted invasion of the personal privacy of others; disclose the identity of confidential sources and reveal confidential information supplied by such sources; and, disclose investigative techniques and procedures.

(3) 5 U.S.C. 552a(e)(4)(I)

This provision of the Privacy Act requires the publication of the categories of sources of records in each system of records. The reasons an exemption from this provision has been claimed are as follows:

(i) Revealing categories of sources of information could disclose investigative techniques and procedures;

(ii) Revealing categories of sources of information could cause sources who supply information to investigators to refrain from giving such information because of fear of reprisal, or fear of breach of promises of anonymity and confidentiality.

(4) U.S.C. 552a(e)(1)

This provision of the Privacy Act requires each agency to maintain in its records only such information about an individual as is relevant and necessary to accomplish a purpose of the agency required to be accomplished by statute or executive order. The reasons for exempting this system of records from the foregoing provision are as follows:

(i) The Internal Revenue Service will limit its inquiries to information that is necessary for the enforcement and administration of the Federal tax law. However, an exemption from the foregoing provision is needed because, particularly in the early stages of an investigation, it is not possible to determine the relevance or necessity of specific information.

(ii) Relevance and necessity are questions of judgment and timing. What appears relevant and necessary when collected may subsequently be determined to be irrelevant or unnecessary. It is only after the information is evaluated that the relevance and necessity of such information can be established with certainty.

(iii) When information is received by the Internal Revenue Service relating to violations of law within the jurisdiction of other agencies, the Internal Revenue Service processes this information through the Service systems in order to forward the material to the appropriate agencies.

The Department of the Treasury has determined that this proposed rule is not a ''significant regulatory action'' under Executive Order 12866.

Pursuant to the requirements of the Regulatory Flexibility Act, 5 U.S.C. 601–612, it is hereby certified that these regulations will not significantly affect a substantial number of small entities. The proposed rule imposes no duties or obligations on small entities.

List of Subjects in 31 CFR Part 1

Privacy.

Part 1 of Title 31 of the Code of Federal Regulations is amended as follows:

1. The authority citation for part 1 continues to read as follows:

Authority: 5 U.S.C. 301, 31 U.S.C. 321, Subpart A also issued under 5 U.S.C. 552, as amended. Subpart C also issued under 5 U.S.C. 552a.

§ 1.36 [Amended]

2. Section 1.36 of Subpart C is amended by adding the following text in numerical order to the table in paragraph (b)(1) under the heading THE INTERNAL REVENUE SERVICE:

* * * * *

(b) * * *
(1) * * *

Name of system	Number
* * * * *	
IRS Third Party Contact Reprisal Records	00.334
* * * * *	

* * * * *

Dated: August 29, 2000.

W. Earl Wright, Jr.,

Chief Management and Administrative Programs Officer.

[FR Doc. 00–27416 Filed 10–24–00; 8:45 am]

BILLING CODE 4810–01–P

DEPARTMENT OF DEFENSE

Office of the Secretary

32 CFR Part 311

[OSD Privacy Program]

Privacy Act of 1974; Implementation

AGENCY: Office of the Secretary, DoD.

ACTION: Proposed rule.

SUMMARY: The Defense Department is amending its Privacy Act regulations to include specific language for providing periodic Privacy Act training for DoD personnel who may be expected to deal with the news media or the public. This amendment is triggered by a change made to its Privacy Program.

DATES: Comments must be received by December 26, 2000 to be considered by the agency.

ADDRESSES: Send comments to the OSD Privacy Act Officer, Washington Headquarter Services, Correspondence and Directives Division, Records Management Division, 1155 Defense Pentagon, Washington, DC 20301–1155.

FOR FURTHER INFORMATION CONTACT: Mr. David Bosworth at (703) 588–0159.

SUPPLEMENTARY INFORMATION:

Executive Order 12866

It has been determined that this Privacy Act rule for the Department of Defense does not constitute ‘significant regulatory action.’ Analysis of the rule indicates that it does not have an annual effect on the economy of $100 million or more; does not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; does not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in Executive Order 12866.

Regulatory Flexibility Act

It has been determined that this Privacy Act rule for the Department of Defense does not have significant economic impact on a substantial number of small entities because it is concerned only with the administration of Privacy Act systems of records within the Department of Defense.

Paperwork Reduction Act

It has been determined that this Privacy Act rule for the Department of Defense imposes no information requirements beyond the Department of Defense and that the information collected within the Department of Defense is necessary and consistent with 5 U.S.C. 552a, known as the Privacy Act, and 44 U.S.C. Chapter 35.

List of Subjects in 32 CFR Part 311

Privacy.

Part 311 is amended as follows:

1. The authority citation for 32 CFR part 311 continues to read as follows:

Authority: Pub. L. 93–579, 88 Stat. 1896 (5 U.S.C. 552a).

2. Section 311.5(a)(7)(ii) is revised to read as follows:

§ 311.5 Responsibilities.

* * * * *

(a) * * *

(7) * * *

(ii) Provide guidance and training to organizational entities as required by 5 U.S.C. 552a and OMB Circular A–130. Periodic training will be provided to public affairs officers and others who may be expected to deal with the news media or the public.

* * * * *

Dated: October 18, 2000.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 00–27322 Filed 10–24–00; 8:45 am]

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DEPARTMENT OF DEFENSE

Department of the Air Force

32 CFR Part 935

RIN 0701–AA65

Wake Island Code

AGENCY: Department of the Air Force, DoD.

ACTION: Proposed rule.

SUMMARY: The Department of the Air Force proposes to revise the Wake Island Code. The current Wake Island Code was promulgated in 1972 when the Air Force had a significant military and civilian presence on the island. In 1994, the Air Force terminated operations on the island and removed its personnel. The small number of personnel currently on the island work for the Department of the Army or its contractors. It is not anticipated that Wake Island will again host a large permanent population. Because of the change in use and the passage of time, it is necessary to revise and update the Code to reflect current and anticipated use. The public is invited to submit comments on these changes to the point of contact listed below.

DATES: Submit comments on or before December 26, 2000.

ADDRESSES: Address all comments concerning this proposed rule to Mr. Philip Sheuerman, Associate General Counsel, Department of the Air Force, SAF/GCN, Room 4C921, 1740 Air Force Pentagon, Washington, DC 20330–1740.

FOR FURTHER INFORMATION CONTACT: Mr. Philip Sheuerman, 703–695–4691.

SUPPLEMENTARY INFORMATION: This action is authorized by Sec. 48, Act of 12 July 1960, 74 Stat. 424, Pub. L. 86–624; E.O. 11048, Sept. 1, 1962, 27 FR 8851; agreement between the Department of Interior and Department of the Air Force, dated June 19, 1972, 37 FR 12255; and Secretary of the Air Force Order 111.1, dated April 26, 1999.

Wake Island, including Peale and Wilkes Islands, is a possession of the United States. It is owned by the United States and is currently under the real property accountability of the Department of the Air Force. Wake Island does not have any aboriginal population and has been occupied intermittently since its accession to the United States by United States military and civilian personnel (excluding the period of Japanese occupation during World War II). The Air Force assumed jurisdiction and control from the Federal Aviation Administration in 1972 and operated an air base there until 1994. Because Wake Island is not part of any state or organized territory of the United States, it does not have an organic civil government. The Congress authorized the President to provide such civil government not otherwise provided for by law. The President delegated that authority to the Secretary of the Interior. The Secretary of the Interior has redelegated that authority to the Secretary of the Air Force. The Secretary of the Air Force has redelegated that authority to the General Counsel of the Air Force. The General Counsel has promulgated the Wake Island Code to provide for civil government not otherwise provided by law. The Wake Island Code has two primary purposes: (1) to provide regulations for conduct on Wake Island not otherwise provided by law; and (2) to provide a judicial system to enforce those requirements. It also delegates authority to the Commander of Pacific Air Forces to perform most of the functions of civil administration.

The current Wake Island Code was written when the island had a substantial military and civilian population. The population currently consists of a small number of personnel working for the Army or for its contractors in support of the Ballistic Missile Defense Organization. It is not anticipated that Wake Island will again host a large permanent population. Additionally, it is currently anticipated that when the Department of Defense no longer has an operational mission requirement for Wake Island, the island will be turned over to the U.S. Fish and Wildlife Service, which currently has a refuge overlay over part of the island. The island has also been used recently as a transit point for illegal aliens being returned to their point of origin. Because of these changes and the passage of time, the current code has become outdated in some respects. The revised code would make a number of changes, the most significant of which are: (1) Require appointment of the Wake Island Court judges and officers of the court only as needed; (2) prohibit the importation or possession of non-indigenous flora or fauna (other than military working dogs and guide dogs for the blind); (3) clarify the authority to redelegate civil administrative authority and make it conform with the current Secretary of the Air Force Order on the subject; (4) update traffic rules including requiring the use of car safety belts; (5) explicitly identify certain federal officers deemed to be peace officers under the Code; (6) clarify the rules governing the judicial system; and (7) ban the private possession of firearms and explosives. In addition, numerous minor changes have been made to clarify language and promote internal consistency and conformity.

The Department of the Air Force has determined that this rule is not a major rule because it will not have an annual effect on the economy of $100 million or more. The Secretary of the Air Force has certified that this rule is exempt from the requirements of the Regulatory Flexibility Act, 5 U.S.C. 601 to 612, because this rule does not have a significant economic impact on small entities as defined by the Act, and does not impose any obligatory information requirements beyond internal Air Force use.

List of Subjects in 32 CFR Part 935

Administrative practice and procedure, Authority delegation (Government agencies), Courts, Crimes, and State and local governments.

For the reasons set forth in the preamble, the Air Force is proposing to revise 32 CFR Part 935 to read as follows:

PART 935—WAKE ISLAND CODE

Subpart A—General

Authority: Sec. 48, Act of July 12, 1960, 74 Stat. 424, Pub. L. 86–624; E.O. 11048, Sept. 1, 1962, 27 FR 8851; agreement between the Department of Interior and Department of the Air Force, dated June 19, 1972, 37 FR 12255; and Secretary of the Air Force Order 111.1, dated April 26, 1999.

Subpart A—General

§ 935.1 Applicability.

(a) The local civil and criminal laws of Wake Island consist of this part and applicable provisions of the laws of the United States.

(b) For the purposes of this part, Wake Island includes Wake, Peale, and Wilkes Islands, and the appurtenant reefs, shoals, shores, bays, lagoons, keys, territorial waters, and superadjacent airspace of them.

§ 935.2 Purpose.

The purpose of this part is to provide:

(a) For the civil administration of Wake Island;

(b) Civil laws for Wake Island not otherwise provided for;

(c) Criminal laws for Wake Island not otherwise provided for; and,

(d) A judicial system for Wake Island not otherwise provided for.

§ 935.3 Definitions.

In this part:

(a) *General Counsel* means the General Counsel of the Air Force or his successor in office.

(b) *Commander* means the Commander, Wake Island.

(c) *Commander, Wake Island* means the Commander of Pacific Air Forces or such subordinate commissioned officer of the Air Force to whom he may delegate his authority under this part.

(d) *He* or *his* includes both the masculine and feminine genders, unless the context implies otherwise.

(e) *Judge* includes Judges of the Wake Island Court and Court of Appeals.

Subpart B—Civil Administration Authority

§ 935.10 Designation and delegation of authority.

(a) The civil administration authority at Wake Island is vested in the Secretary of the Air Force. That authority has been delegated to the General Counsel of the Air Force with authority to redelegate all or any part of his functions, powers, and duties under this part to such officers and employees of the Air Force as he may designate, but excluding redelegation of the power to promulgate, amend, or repeal this part, or any part thereof. Such redelegation must be in writing and must be in accordance with any applicable Secretary of the Air Force Orders. Such redelegation may be further redelegated subject to such restrictions as the delegating authority may impose. A redelegation may also be made to a commissioned officer serving in another United States military service who exercises military command, but such redelegation must explicitly and specifically list the powers redelegated and shall not include the power or authority to issue permits, licenses, or other outgrants unless individually approved by the Air Force official who made the redelegation. The Commander is the agent of the Secretary, his delegate and designee when carrying out any function, power, or duty assigned under this part.

(b) The authority of the General Counsel to appoint Judges shall not be delegated.

(c) Judges and officers of the court may not redelegate their powers or authorities except as specifically noted in this part.

§ 935.11 Permits.

(a) Permits in effect on the effective date of this part continue in effect until revoked or rescinded by the Commander. Permits issued by the Commander shall conform to the requirements of Air Force Instruction 32–9003, or any successor instruction. No permit or registration shall be issued under other authority that is inconsistent with this part. The Commander may issue island permits or registration for—

(1) Businesses, including any trade, profession, calling, or occupation, and any establishment where food or beverages are prepared, offered, or sold for human consumption.

(2) Self-propelled motor vehicles, except aircraft, including attached trailers.

(3) Vehicle operators.

(4) Boats.

(5) Food handlers.

(6) Drugs, narcotics, and poisons.

(7) Construction.

(8) Burials.

(b) To the extent it is not inconsistent with this part, any permit or registration issued pursuant to Air Force directives or instructions as applicable to Wake Island shall constitute a permit or registration under this section, and no other permit or registration shall be required.

§ 935.12 Functions, powers, and duties.

The Commander may:

(a) Appoint Peace Officers;

(b) Direct the abatement of any public nuisance upon failure of any person to comply with a notice of removal;

(c) Direct sanitation and fire prevention inspections;

(d) Establish records of vital statistics;

(e) Direct the registration and inspections of motor vehicles, boats, and aircraft;

(f) Impose quarantines;

(g) Direct the impoundment and destruction of unsanitary food, fish, or beverages;

(h) Direct the evacuation of any person from a hazardous area;

(i) Commission notaries public;

(j) Establish and maintain a facility for the restraint or confinement of persons and provide for their care;

(k) Direct the removal of any person from Wake Island and prohibit his future presence on the island;

(l) Issue traffic regulations that are not inconsistent with this part, and post traffic signs;

(m) Prohibit the posting, distribution, or public display of advertisements, signs, circulars, petitions, or similar materials, soliciting, picketing, or parading in any public place or area if he determines it would interfere with public business or endanger the health and safety of persons and property on Wake Island;

(n) Perform or direct any other acts, not inconsistent with this part or applicable laws and regulations, if he considers it necessary for protection of the health or safety of persons and property on Wake Island; and,

(o) Issue any order or notice necessary to implement this section. Any order or notice issued pursuant to Air Force directives and instructions as applicable to Wake Island shall constitute an order or notice issued pursuant to this section.

§ 935.13 Revocation or suspension of permits and registrations.

(a) The Commander may revoke or suspend any island permit or registration for cause, with or without notice.

(b) The holder of any revoked or suspended permit or registration may demand a personal hearing before the Commander within 30 days after the effective date of the revocation or suspension.

(c) If a hearing is demanded, it shall be granted by the Commander within 30 days of the date of demand. The applicant may appear in person and present such documentary evidence as is pertinent. The Commander shall render a decision, in writing, setting forth his reasons, within 30 days thereafter.

(d) If a hearing is not granted within 30 days, a written decision is not rendered within 30 days after a hearing, or the applicant desires to appeal a decision, he may, within 30 days after the latest of any of the foregoing dates appeal in writing to the General Counsel, whose decision shall be final.

§ 935.14 Autopsies.

The medical officer on Wake Island, or any other qualified person under his supervision, may perform autopsies upon authorization of the Commander or a Judge of the Wake Island Court.

§ 935.15 Notaries public.

(a) To the extent he considers there to be a need for such services, the Commander may commission one or more residents of Wake Island as notaries public. The Commander of Pacific Air Forces may not redelegate this authority.

(b) A person applying for commission as a notary public must be a citizen of the United States and shall file an application, together with evidence of good character and a proposed seal in such form as the Commander requires, with a fee of $50 which shall be deposited in the Treasury as a miscellaneous receipt.

(c) Upon determining there to be a need for such a service and after such investigation as he considers necessary, the Commander may commission an applicant as a notary public. Commissions shall expire 3 years after the date thereof, and may be renewed upon application upon payment of a fee of $25.

(d) Judges and the Clerk of the Wake Island Court and the Island Attorney shall have the general powers of a notary public.

§ 935.16 Emergency authority.

During the imminence and duration of any emergency declared by him, the Commander may perform or direct any acts necessary to protect life and property.

Subpart C—Civil Law

§ 935.20 Applicable law.

Civil acts and deeds taking place on Wake Island shall be determined and adjudicated as provided in this part; and otherwise, as provided in the Act of June 15, 1950 (64 Stat. 217) (48 U.S.C. 644a), according to the laws of the United States relating to such an act or deed taking place on the high seas on board a merchant vessel or other vessel belonging to the United States.

§ 935.21 Civil rights, powers, and duties.

In any case in which the civil rights, powers, and duties of any person on Wake Island are not otherwise prescribed by the laws of the United States or this part, the civil rights, powers, and duties as they obtain under the laws of the State of Hawaii will apply to persons on Wake Island.

Subpart D—Criminal Law

§ 935.30 General.

In addition to any act made criminal in this part, any act committed on Wake Island that would be criminal if committed on board a merchant vessel or other vessel belonging to the United States is a criminal offense and shall be adjudged and punished according to the laws applicable on board those vessels on the high seas.

Subpart E—Petty Offenses

§ 935.40 Criminal offenses.

No person may on Wake Island:

(a) Sell or give an alcoholic beverage manufactured for consumption (including beer, ale, or wine) to any person who is not at least 21 years of age;

(b) Procure for, engage in, aid or abet in, or solicit for prostitution;

(c) Use any building, structure, vehicle, or public lands for the purpose of lewdness, assignation, or prostitution;

(d) Possess or display (publicly or privately) any pornographic literature, film, device, or any matter containing obscene language, that tends to corrupt morals;

(e) Make any obscene or indecent exposure of his person;

(f) Commit any disorderly, obscene, or indecent act;

(g) Commit any act of voyeurism (Peeping Tom);

(h) Enter upon any assigned residential quarters or areas immediately adjacent thereto, without permission of the assigned occupant;

(i) Discard or place any paper, debris, refuse, garbage, litter, bottle, can, human or animal waste, trash, or junk in any public place, except into a receptacle or place designated or used for that purpose;

(j) Commit any act of nuisance;

(k) With intent to provoke a breach of the peace or under such circumstances that a breach of the peace may be occasioned thereby, act in such a manner as to annoy, disturb, interfere with, obstruct, or be offensive to any other person;

(l) Be drunk in any public place;

(m) Use any profane or vulgar language in a public place;

(n) Loiter or roam about Wake Island, without any lawful purpose, at late and unusual hours of the night;

(o) Lodge or sleep in any place without the consent of the person in legal possession of that place;

(p) Grossly waste any potable water;

(q) Being a male, knowingly enter any area, building, or quarters reserved for women, except in accordance with established visiting procedures;

(r) Smoke or ignite any fire in any designated and posted ''No Smoking'' area, or in the immediate proximity of any aircraft or fueling pit;

(s) Enter any airplane parking area or ramp, unless he is on duty therein, is a passenger under appropriate supervision, or is authorized by the Commander to enter that place;

(t) Interfere or tamper with any aircraft or servicing equipment or facility, or put in motion the engine of any aircraft without the permission of its operator;

(u) Post, distribute, or publicly display advertisements, signs, circulars, petitions, or similar materials, or solicit, picket, or parade in any public place or area where prohibited by the Commander pursuant to Sec. 935.12;

(v) Import onto or keep on Wake Island any plant or animal not indigenous to the island, other than military working dogs or a guide dog for the blind or visually-impaired accompanying its owner; or,

(w) Import or bring onto or possess while on Wake Island any firearm, whether operated by air, gas, spring, or otherwise, or explosive device, including fireworks, unless owned by the United States.

Subpart F—Penalties

§ 935.50 Petty offenses.

Whoever is found guilty of a violation of any provision of subpart E of this part is subject to a fine of not more than $500 or imprisonment of not more than 6 months, or both.

§ 935.51 Motor vehicle violations.

Whoever is found guilty of a violation of subpart N of this part is subject to a fine of not more than $100, imprisonment of not more than 30 days, or suspension or revocation of his motor vehicle operator's permit, or any combination or all of these punishments.

§ 935.52 Violations of Subpart O or P of this part.

(a) Whoever is found guilty of a violation of subpart O or P of this part is subject to a fine of not more than $100, or imprisonment of not more than 30 days, or both.

(b) The penalties prescribed in paragraph (a) of this section are in addition to and do not take the place of any criminal penalty otherwise applicable and currently provided by the laws of the United States.

§ 935.53 Contempt.

A Judge may, in any civil or criminal case or proceeding, punish any person for disobedience of any order of the Court, or for any contempt committed in the presence of the Court, by a fine of not more than $100, or imprisonment of not more than 30 days, or both.

Subpart G—Judiciary

§ 935.60 Wake Island Judicial Authority.

(a) The judicial authority under this part is vested in the Wake Island Court and the Wake Island Court of Appeals.

(b) The Wake Island Court and the Wake Island Court of Appeals shall each have a seal approved by the General Counsel.

(c) Judges and Clerks of the Courts may administer oaths.

§ 935.61 Wake Island Court.

(a) The trial judicial authority for Wake Island is vested in the Wake Island Court.

(b) The Wake Island Court consists of one or more Judges, appointed by the General Counsel as needed. The term of a Judge shall be for one year, but he may be re-appointed. When the Wake Island Court consists of more than one Judge, the General Counsel shall designate one of the Judges as the Chief Judge who will assign matters to Judges, determine when the Court will sit individually or en banc, and prescribe rules of the Court not otherwise provided for in this Code. If there is only one Judge appointed, that Judge shall be the Chief Judge.

(c) Sessions of the Court are held on Wake Island or Hawaii at times and places designated by the Chief Judge.

§ 935.62 Island Attorney.

There is an Island Attorney, appointed by the General Counsel as needed. The Island Attorney shall serve at the pleasure of the General Counsel. The Island Attorney represents the United States in the Wake Island Court and in the Wake Island Court of Appeals.

§ 935.63 Public Defender.

There is a Public Defender, appointed by the General Counsel as needed. The Public Defender shall serve at the pleasure of the General Counsel. The Public Defender represents any person charged with an offense under this Code who requests representation and who is not able to afford his own legal representation.

§ 935.64 Clerk of the Court.

There is a Clerk of the Court, who is appointed by the Chief Judge. The Clerk shall serve at the pleasure of the Chief Judge. The Clerk maintains a public docket containing such information as the Chief Judge may prescribe, administers oaths, and performs such other duties as the Court may direct. The Clerk is an officer of the Court.

§ 935.65 Jurisdiction.

(a) The Wake Island Court has jurisdiction over all offenses under this Code and all actions of a civil nature, cognizable at law or in equity, where the amount in issue is not more than $1,000, exclusive of interests and costs, but not including changes of name or domestic relations matters.

(b) The United States is not subject to suit in the Court.

(c) The United States may intervene in any matter in which the Island Attorney determines it has an interest.

§ 935.66 Court of Appeals.

(a) The appellate judicial authority for Wake Island is vested in the Wake Island Court of Appeals.

(b) The Wake Island Court of Appeals consists of a Chief Judge and two Associate Judges, appointed by the General Counsel as needed. The term of a judge shall be for one year, but he may be reappointed. The Chief Judge assigns matters to Judges, determines whether the Court sits individually or en banc, and prescribes rules of the Court not otherwise provided for in this Code.

(c) Sessions of the Court of Appeals are held in the National Capital Region at times and places designated by the Chief Judge. The Court may also hold sessions at Wake Island or in Hawaii.

(d) A quorum of the Court of Appeals will consist of one Judge when sitting individually and three Judges when sitting en banc.

(e) The address of the Court of Appeals is—Wake Island Court of Appeals, SAF/GC, Room 4E856, 1740 Air Force Pentagon, Washington, DC 20330–1740.

§ 935.67 Clerk of the Court of Appeals.

There is a Clerk of the Court of Appeals, who is appointed by the Chief Judge. The Clerk serves at the pleasure of the Chief Judge. The Clerk maintains a public docket containing such information as the Chief Judge may prescribe, administers oaths, and performs such other duties as the Court directs. The Clerk is an officer of the Court.

§ 935.68 Jurisdiction of the Court of Appeals.

The Court of Appeals has jurisdiction over all appeals from the Wake Island Court.

§ 935.69 Qualifications and Admission to Practice.

(a) No person may be appointed a Judge, Island Attorney, or Public Defender under this part who is not a member of the bar of a State, Commonwealth, or Territory of the United States or of the District of Columbia.

(b) Any person, other than an officer or employee of the Department of the Air Force, appointed as a Judge, Island Attorney, Public Defender, or to any other office under this part shall, prior to entering upon the duties of that office, take an oath, prescribed by the General Counsel, to preserve, protect, and defend the Constitution of the United States. Such oath may be administered by any officer or employee of the Department of the Air Force.

(c) Civilian officers and employees of the Department of the Air Force may be appointed as a Judge, Island Attorney, Public Defender, or Clerk, as an additional duty and to serve without additional compensation. Officers and employees of the Department of the Air Force, both civilian and military, who serve in positions designated as providing legal services to the Department and who are admitted to practice law in an active status before the highest court of a State, Commonwealth, or territory of the United States, or of the District of Columbia, and are in good standing therewith, are admitted to the Bar of the Wake Island Court and the Wake Island Court of Appeals.

(d) No person may practice law before the Wake Island Court or the Wake Island Court of Appeals who is not admitted to Bar of those courts. Any person admitted to practice law in an active status before the highest court of a State, Commonwealth, or territory of the United States, or of the District of Columbia, and in good standing therewith, may be admitted to the Bar of the Wake Island Court and the Wake Island Court of Appeals. Upon request of the applicant, the Court, on its own motion, may grant admission. A grant of admission by either court constitutes admission to practice before both courts.

Subpart H—Statute of Limitations

§ 935.70 Limitation of actions.

(a) No civil action may be filed more than 1 year after the cause of action arose.

(b) No person is liable to be tried under this Code for any offense if the offense was committed more than 1 year before the date the information or citation is filed with the Clerk of the Wake Island Court.

Subpart I—Subpoenas, Wake Island Court

§ 935.80 Subpoenas.

(a) A Judge or the Clerk of the Court shall issue subpoenas for the attendance of witnesses. The subpoena must include the name of the Court and the title, if any, of the proceeding; and shall command each person to whom it is directed to attend and give testimony at the time and place specified therein. The Clerk may issue a subpoena for a party requesting it, setting forth the name of the witness subpoenaed.

(b) A Judge or the Clerk may also issue a subpoena commanding the person to whom it is directed to produce the books, papers, documents, or other objects designated therein. The Court may direct that books, papers, documents, or other objects designated in the subpoena be produced before the Court at a time before the trial or before the time when they are to be offered into evidence. It may, upon their production, allow the books, papers, documents, or objects or portions thereof to be inspected by the parties and their representatives.

(c) Any peace officer or any other person who is not a party and who is at least 18 years of age may serve a subpoena. Service of a subpoena shall be made by delivering a copy thereof to the person named.

(d) The Clerk of the Court shall assess and collect a witness fee of $40 for each subpoena requested by any party other than the United States, which shall be tendered to the witness as his witness fee together with service of the subpoena. Witnesses subpoenaed by the Island Attorney shall be entitled to a fee of $40 upon presentment of a proper claim therefor on the United States. No duly summoned witness may refuse, decline, or fail to appear or disobey a subpoena on the ground that the witness fee was not tendered or received.

(e) Upon a showing that the evidence is necessary to meet the ends of justice and that the defendant is indigent, the Public Defender may request the Court to direct the Island Attorney to obtain the issuance of a subpoena on behalf of a defendant in a criminal case. Witnesses so called on behalf of the defendant shall be entitled to the same witness fees as witnesses requested by the Island Attorney.

(f) Subpoenas may be credited only to persons or things on Wake Island.

(g) No person who is being held on Wake Island because of immigration status shall be entitled to a witness fee, but shall nevertheless be subject to subpoena like any other person.

Subpart J—Civil Actions

§ 935.90 General.

(a) The Federal Rules of Civil Procedure apply to civil actions in the Court to the extent the presiding Judge considers them applicable under the circumstances.

(b) There is one form of action called the ''Civil Action.''

(c) Except as otherwise provided for in this part, there is no trial by jury.

(d) A civil action begins with the filing of a complaint with the Court. The form of the complaint is as follows except as it may be modified to conform as appropriate to the particular action:

In the Wake Island Court
Civil Action No. ______

____
(Plaintiff)
vs. Complaint

____
(Defendant)

________ plaintiff alleges that the defendant is indebted to plaintiff in the sum of $______; that plaintiff has demanded payment of said sum; that defendant has refused to pay; that defendant resides at ______ on Wake Island; that plaintiff resides at ________.

____
(Plaintiff)

§ 935.91 Summons.

Upon the filing of a complaint, a Judge or Clerk of the Court shall issue a summons in the following form and deliver it for service to a peace officer or other person specifically designated by the Court to serve it:

In the Wake Island Court
Civil Action No. ______

____
(Plaintiff)
vs. Summons

____
(Defendant)

To the above-named defendant:

You are hereby directed to appear and answer the attached cause at ______ on ______ day of ________, 20 ______, at ____ __.M. and to have with you all books, papers, and witnesses needed by you to establish any defense you have to said claim.

You are further notified that in case you do not appear, judgment will be given against you, for the amount of said claim, together with cost of this suit and the service of this order.

Dated: ______, 20 ____.

____
(Clerk, Wake Island Court)

§ 935.92 Service of complaint.

(a) A peace officer or other person designated by the Court to make service shall serve the summons and a copy of the complaint at Wake Island upon the defendant personally, or by leaving them at his usual place of abode with any adult residing or employed there.

(b) In the case of a corporation, partnership, joint stock company, trading association, or other unincorporated association, service may be made at Wake Island by delivering a copy of the summons and complaint to any of its officers, a managing or general agent, or any other agent authorized by appointment or by law to receive service.

§ 935.93 Delivery of summons to plaintiff.

The Clerk of the Court shall promptly provide a copy of the summons to the plaintiff, together with notice that if the plaintiff fails to appear at the Court at the time set for the trial, the case will be dismissed. The trial shall be set at a date that will allow each party at least 7 days, after the pleadings are closed, to prepare.

§ 935.94 Answer.

(a) The defendant may, at his election, file an answer to the complaint.

(b) The defendant may file a counterclaim, setoff, or any reasonable affirmative defense.

(c) If the defendant elects to file a counterclaim, setoff, or affirmative defense, the Court shall promptly send a copy of it to the plaintiff.

§ 935.95 Proceedings; record; judgment.

(a) The presiding Judge is responsible for the making of an appropriate record of each civil action.

(b) All persons shall give their testimony under oath or affirmation. The Chief Judge shall prescribe the oath and affirmation that may be administered by any Judge or the Clerk of the Court.

(c) Each party may present witnesses and other forms of evidence. In addition, the presiding Judge may informally investigate any controversy, in or out of the Court, if the evidence obtained as a result is adequately disclosed to all parties. Witnesses, books, papers, documents, or other objects may be subpoenaed as provided for in Sec. 935.80 for criminal cases.

(d) The Court may issue its judgment in writing or orally from the bench. However, if an appeal is taken from the judgment, the presiding Judge shall, within 10 days after it is filed, file a memorandum of decision as a part of the record. The Judge shall place in the memorandum findings of fact, conclusions of law, and any comments that he considers will be helpful to a thorough understanding and just determination of the case on appeal.

§ 935.96 Execution of judgment.

(a) If, after 60 days after the date of entry of judgment (or such other period as the Court may prescribe), the judgment debtor has not satisfied the judgment, the judgment creditor may apply to the Court for grant of execution on the property of the judgment debtor.

(b) Upon a writ issued by the Court, any peace officer may levy execution on any property of the judgment debtor except—

(1) His wearing apparel up to a total of $300 in value;

(2) His beds, bedding, household furniture and furnishings, stove, and cooking utensils, up to a total of $300 in value; and,

(3) Mechanics tools and implements of the debtor's trade up to a total of $200 in value.

(c) Within 60 days after levy of execution, a peace officer shall sell the seized property at public sale and shall pay the proceeds to the Clerk of the Court. The Clerk shall apply the proceeds as follows:

(1) First, to the reasonable costs of execution and sale and court costs.

(2) Second, to the judgment.

(3) Third, the residue (if any) to the debtor.

(d) In any case in which property has been seized under a writ of execution, but not yet sold, the property seized shall be released upon payment of the judgment, court costs, and the costs of execution.

§ 935.97 Garnishment.

(a) If a judgment debtor fails to satisfy a judgment in full within 60 days after the entry of judgment (or such other period as the Court may prescribe), the Court may, upon the application of the judgment creditor issue a writ of garnishment directed to any person having money or property in his possession belonging to the judgment debtor or owing money to the judgment debtor. The following are exempt from judgment:

(1) Ninety percent of so much of the gross wages as does not exceed $200 due to the judgment debtor from his employer.

(2) Eighty percent of so much of the gross wages as exceeds $200 but does not exceed $500 due to the judgment debtor from his employer;

(3) Fifty percent of so much of the gross wages as exceeds $500 due to the judgment debtor from his employer.

(b) The writ of garnishment shall be served on the judgment debtor and the garnishee and shall direct the garnishee to pay or deliver from the money or property owing to the judgment debtor such money or property as the Court may prescribe.

(c) The garnished amount shall be paid to the Clerk of the Court, who shall apply it as follows:

(1) First, to satisfy the costs of garnishment and court costs.

(2) Second, to satisfy the judgment.

(3) Third, the residue (if any) to the judgment debtor.

(d) Funds of the debtor held by the United States are not subject to garnishment.

Subpart K—Criminal Actions

§ 935.100 Bail.

(a) A person who is arrested on Wake Island for any violation of this part is entitled to be released on bail in an amount set by a Judge or Clerk of the Court, which may not exceed the maximum fine for the offense charged. If the defendant fails to appear for arraignment, trial or sentence, or otherwise breaches any condition of bail, the Court may direct a forfeiture of the whole or part of the bail and may on motion after notice to the surety or sureties, if any, enter a judgment for the amount of the forfeiture.

(b) The Chief Judge of the Wake Island Court may prescribe a schedule of bail for any offense under this Code which the defendant may elect to post and forfeit without trial, in which case the Court shall enter a verdict of guilty and direct forfeiture of the bail.

(c) Bail will be deposited in cash with the Clerk of the Court.

§ 935.101 Seizure of property.

Any property seized in connection with an alleged offense (unless the property is perishable) is retained pending trial in accordance with the orders of the Court. The property must be produced in Court, if practicable. At the termination of the trial, the Court shall restore the property or the funds resulting from the sale of the property to the owner, or make such other proper order as may be required and incorporate its order in the record of the case. Any item used in the commission of the offense, may, upon order of the Court, be forfeited to the United States. All contraband, which includes any item that is illegal for the owner to possess, shall be forfeited to the United States; such forfeiture shall not relieve the owner from whom the item was taken from any costs or liability for the proper disposal of such item.

§ 935.102 Information.

(a) Any offense may be prosecuted by a written information signed by the Island Attorney. However, if the offense is one for which issue of a citation is authorized by this part and a citation for the offense has been issued, the citation serves as an information.

(b) A copy of the information shall be delivered to the accused, or his counsel, as soon as practicable after it is filed.

(c) Each count of an information may charge one offense only and must be particularized sufficiently to identify the place, the time, and the subject matter of the alleged offense. It shall refer to the provision of law under which the offense is charged, but any error in this reference or its omission may be corrected by leave of Court at any time before sentence and is not grounds for reversal of a conviction if the error or omission did not mislead the accused to his prejudice.

§ 935.103 Motions and pleas.

(a) Upon motion of the accused at any time after filing of the information or copy of citation, the Court may order the prosecutor to allow the accused to inspect and copy or photograph designated books, papers, documents, or tangible objects obtained from or belonging to the accused, or obtained from others by seizure or process, upon a showing that the items sought may be material to the preparation of his defense and that the request is reasonable.

(b) When the Court is satisfied that it has jurisdiction to try the accused as charged, it shall require the accused to identify himself and state whether or not he has counsel. If he has no counsel, but desires counsel, the Court shall give him a reasonable opportunity to procure counsel.

(c) When both sides are ready for arraignment, or when the Court determines that both sides have had adequate opportunities to prepare for arraignment, the Court shall read the charges to the accused, explain them (if necessary), and, after the reading or stating of each charge in Court, ask the accused whether he pleads "guilty" or "not guilty". The Court shall enter in the record of the case the plea made to each charge.

(d) The accused may plead "guilty" to any or all of the charges against him, except that the Court may in its discretion refuse to accept a plea of guilty, and may not accept a plea without first determining that the plea is made voluntarily with understanding of the nature of the charge.

(e) The accused may plead "not guilty" to any or all of the charges against him. The Court shall enter a plea of not guilty if the answer of the accused to any charge is such that it does not clearly amount to a plea of guilty or not guilty.

(f) The accused may, at any stage of the trial, with the consent of the Court, change a plea of not guilty to one of guilty. The Court shall then proceed as if the accused had originally pleaded guilty.

§ 935.104 Sentence after a plea of guilty.

If the Court accepts a plea of guilty to any charge or charges, it shall make a finding of guilty on that charge. Before imposing sentence, the Court shall hear such statements for the prosecution and defense, if any, as it requires to enable it to determine the sentence to be imposed. The accused or his counsel may make any reasonable statement he wishes in mitigation or of previous good character. The prosecution may introduce evidence in aggravation, or of bad character if the accused has introduced evidence of good character. The Court shall then impose any lawful sentence that it considers proper.

§ 935.105 Trial.

(a) If the accused pleads not guilty, he is entitled to a trial on the charges in accordance with procedures prescribed in the Rules of Criminal Procedure for the U.S. District Courts, except as otherwise provided for in this part, to the extent the Court considers practicable and necessary to the ends of justice. There is no trial by jury.

(b) All persons shall give their testimony under oath or affirmation. The Chief Judge shall prescribe the oath and affirmation that may be administered by any Judge or the Clerk of the Court.

(c) Upon completion of the trial, the Court shall enter a judgment consisting of a finding or findings and sentence or sentences, or discharge of the accused.

(d) The Court may suspend any sentence imposed, may order the revocation of any Island automobile permit in motor vehicle cases, and may place the accused on probation. It may delay sentencing pending the receipt of any presentencing report ordered by it.

Subpart L—Appeals and New Trials

§ 935.110 Appeals.

(a) Any party to an action may, within 15 days after judgment, appeal an interlocutory order, issue of law, or judgment, except that an acquittal may not be appealed, by filing a notice of appeal with the Clerk of the Wake Island Court and serving a copy on the opposing party. Judgment is stayed while the appeal is pending.

(b) Upon receiving a notice of appeal with proof of service on the opposing party, the Clerk shall forward the record of the action to the Wake Island Court of Appeals.

(c) The appellant shall serve on the opposing party and file a memorandum setting forth his grounds of appeal with the Wake Island Court of Appeals within 15 days after the date of the judgment. The appellee may serve and file a reply memorandum within 15 days thereafter. An appeal and the reply shall be deemed to be filed when deposited in the U.S. mail with proper postage affixed, addressed to the Clerk, Wake Island Court of Appeals, at his address in Washington, DC. The period for filing an appeal may be waived by the Court of Appeals when the interests of justice so require.

(d) The Court of Appeals may proceed to judgment on the record, or, if the Court considers that the interests of justice so require, grant a hearing.

(e) The decision of the Court of Appeals shall be in writing and based on the record prepared by the Wake Island Court, on the proceedings before the Court of Appeals, if any be had, and on any memoranda that are filed. If the Court of Appeals considers the record incomplete, the case may be remanded to the Wake Island Court for further proceedings.

(f) The decision of the Court of Appeals is final.

§ 935.111 New trial.

A Judge of the Wake Island Court may order a new trial as required in the interest of justice, or vacate any judgment and enter a new one, on motion made within a reasonable time after discovery by the moving party of matters constituting the grounds upon which the motion for new trial or vacation of judgment is made.

Subpart M—Peace Officers

§ 935.120 Authority.

Peace officers:

(a) Have the authority of a sheriff at common law;

(b) May serve any process on Wake Island that is allowed to be served under a Federal or State law; the officer serving the process shall execute any required affidavit of service;

(c) May conduct sanitation or fire prevention inspections;

(d) May inspect motor vehicles, boats, and aircraft;

(e) May confiscate property used in the commission of a crime;

(f) May deputize any member of the Air Force serving on active duty or civilian employee of the Department of the Air Force to serve as a peace officer;

(g) May investigate accidents and suspected crimes;

(h) May direct vehicular or pedestrian traffic;

(i) May remove and impound abandoned or unlawfully parked vehicles, boats, or aircraft, or vehicles, boats, or aircraft interfering with fire control apparatus or ambulances;

(j) May take possession of property lost, abandoned, or of unknown ownership;

(k) May enforce quarantines;

(l) May impound and destroy food, fish, or beverages found unsanitary;

(m) May be armed;

(n) May exercise custody over persons in arrest or confinement;

(o) May issue citations for violations of this part; and,

(p) May make arrests, as provided for in Sec. 935.122.

§ 935.121 Qualifications of peace officers.

Any person appointed as a peace officer must be a citizen of the United States and have attained the age of 18 years. The following persons, while on Wake Island on official business, shall be deemed peace officers: special agents of the Air Force Office of Special Investigations, members of the Air Force Security Forces, agents of the Federal Bureau of Investigation, United States marshals and their deputies, officers and agents of the United States Secret Service, agents of the United States Bureau of Alcohol, Tobacco, and Firearms, agents of the United States Customs Service, and agents of the United States Immigration and Naturalization Service.

§ 935.122 Arrests.

(a) Any person may make an arrest on Wake Island, without a warrant, for any crime (including a petty offense) that is committed in his presence.

(b) Any peace officer may, without a warrant, arrest any person on Wake Island who violates any provision of this part or commits a crime that is not a violation of this part, in his presence, or that he reasonably believes that person to have committed.

(c) In making an arrest, a peace officer must display a warrant, if he has one, or otherwise clearly advise the person arrested of the violation alleged, and thereafter require him to submit and be taken before the appropriate official on Wake Island.

(d) In making an arrest, a peace officer may use only the degree of force needed to effect submission, and may remove any weapon in the possession of the person arrested.

(e) A peace officer may, whenever necessary to enter any building, vehicle, or aircraft to execute a warrant of arrest, force an entry after verbal warning.

(f) A peace officer may force an entry into any building, vehicle, or aircraft whenever—

(1) It appears necessary to prevent serious injury to persons or damage to property and time does not permit the obtaining of a warrant;

(2) To effect an arrest when in hot pursuit; or

(3) To prevent the commission of a crime which he reasonably believes is being committed or is about to be committed.

§ 935.123 Warrants.

Any Judge may issue or direct the Clerk to issue a warrant for arrest if, upon complaint, it appears that there is probable cause to believe an offense has been committed and that the person named in the warrant has committed it. If a Judge is not available, the warrant may be issued by the Clerk and executed, but any such warrant shall be thereafter approved or quashed by the first available Judge. The issuing officer shall:

(a) Place the name of the person charged with the offense in the warrant, or if his name is not known, any name or description by which he can be identified with reasonable certainty;

(b) Describe in the warrant the offense charged;

(c) Place in the warrant a command that the person charged with the offense be arrested and brought before the Wake Island Court;

(d) Sign the warrant; and,

(e) Issue the warrant to a peace officer for execution.

§ 935.124 Release from custody.

The Chief Judge may authorize the Clerk to issue pro forma orders of the Court discharging any person from custody, with or without bail, pending trial, whenever further restraint is not required for protection of persons or property on Wake Island. Persons not so discharged shall be brought before a Judge or U.S. Magistrate as soon as a Judge or Magistrate is available. Judges may discharge defendants from custody, with or without bail or upon recognizance, or continue custody pending trial as the interests of justice and public safety require.

§ 935.125 Citation in place of arrest.

In any case in which a peace officer may make an arrest without a warrant, he may issue and serve a citation if he considers that the public interest does not require an arrest. The citation must briefly describe the offense charged and direct the accused to appear before the Wake Island Court at a designated time and place.

Subpart N—Motor Vehicle Code

§ 935.130 Applicability.

This subpart applies to self-propelled motor vehicles (except aircraft), including attached trailers.

§ 935.131 Right-hand side of the road.

Each person driving a motor vehicle on Wake Island shall drive on the right-hand side of the road, except where necessary to pass or on streets where a sign declaring one-way traffic is posted.

§ 935.132 Speed limits.

Each person operating a motor vehicle on Wake Island shall operate it at a speed:

(a) That is reasonable, safe, and proper, considering time of day, road and weather conditions, the kind of motor vehicle, and the proximity to persons or buildings, or both; and

(b) That does not exceed 40 miles an hour or such lesser speed limit as may be posted.

§ 935.133 Right-of-way.

(a) A pedestrian has the right-of-way over vehicular traffic when in the vicinity of a building, school, or residential area.

(b) In any case in which two motor vehicles have arrived at an uncontrolled intersection at the same time, the vehicle on the right has the right-of-way.

(c) If the driver of a motor vehicle enters an intersection with the intent of making a left turn, he shall yield the right-of-way to any other motor vehicle that has previously entered the intersection or is within hazardous proximity.

(d) When being overtaken by another motor vehicle, the driver of the slower vehicle shall move it to the right to allow safe passing.

(e) The driver of a motor vehicle shall yield the right-of-way to emergency vehicles on an emergency run.

§ 935.134 Arm signals.

(a) Any person operating a motor vehicle and making a turn or coming to a stop shall signal the turn or stop in accordance with this section.

(b) A signal for a turn or stop is made by fully extending the left arm as follows:

(1) Left turn—extend left arm horizontally.

(2) Right turn—extend left arm upward.

(3) Stop or decrease speed—extend left arm downward.

(c) A signal light or other device may be used in place of an arm signal prescribed in paragraph (b) of this section if it is visible and intelligible.

§ 935.135 Turns.

(a) Each person making a right turn in a motor vehicle shall make the approach and turn as close as practicable to the right-hand curb or road edge.

(b) Each person making a left turn in a motor vehicle shall make the approach and turn immediately to the right of the center of the road, except that on multi-lane roads of one-way traffic flow he may make the turn only from the left lane.

(c) No person may make a U-turn in a motor vehicle if he cannot be seen by the driver of any approaching vehicle within a distance of 500 feet.

(d) No person may place a vehicle in motion from a stopped position, or change from or merge into a lane of traffic, until he can safely make that movement.

§ 935.136 General operating rules.

No person may, while on Wake Island—

(a) Operate a motor vehicle in a careless or reckless manner;

(b) Operate or occupy a motor vehicle while he is under the influence of a drug or intoxicant;

(c) Consume an alcoholic beverage (including beer, ale, or wine) while he is in a motor vehicle;

(d) Operate a motor vehicle that is overloaded or is carrying more passengers than it was designed to carry;

(e) Ride on the running board, step, or outside of the body of a moving motor vehicle;

(f) Ride a moving motor vehicle with his arm or leg protruding, except when using the left arm to signal a turn;

(g) Operate a motor vehicle in a speed contest or drag race;

(h) Park a motor vehicle for a period longer than the posted time limit;

(i) Stop, park, or operate a motor vehicle in a manner that impedes or blocks traffic;

(j) Park a motor vehicle in an unposted area, except adjacent to the right-hand curb or edge of the road;

(k) Park a motor vehicle in a reserved or restricted parking area that is not assigned to him;

(l) Sound the horn of a motor vehicle, except as a warning signal;

(m) Operate a tracked or cleated vehicle in a manner that damages a paved or compacted surface;

(n) Operate any motor vehicle contrary to a posted traffic sign;

(o) Operate a motor vehicle as to follow any other vehicle closer than is safe under the circumstances;

(p) Operate a motor vehicle off of established roads, or in a cross-country manner, except when necessary in conducting business;

(q) Operate a motor vehicle at night or when raining on the traveled part of a street or road, without using operating headlights; or,

(r) Operate a motor vehicle without each passenger wearing a safety belt; this shall not apply to military combat vehicles designed and fabricated without safety belts.

§ 935.137 Operating requirements.

Each person operating a motor vehicle on Wake Island shall:

(a) Turn off the highbeam headlights of his vehicle when approaching an oncoming vehicle at night; and,

(b) Comply with any special traffic instructions given by an authorized person.

§ 935.138 Motor bus operation.

Each person operating a motor bus on Wake Island shall:

(a) Keep its doors closed while the bus is moving with passengers on board; and,

(b) Refuse to allow any person to board or alight the bus while it is moving.

§ 935.139 Motor vehicle operator qualifications.

(a) No person may operate a privately owned motor vehicle on Wake Island unless he has an island operator's permit.

(b) The Commander may issue an operator's permit to any person who is at least 18 years of age and satisfactorily demonstrates safe-driving knowledge, ability, and physical fitness.

(c) No person may operate, on Wake Island, a motor vehicle owned by the United States unless he holds a current operator's permit issued by the United States.

(d) Each person operating a motor vehicle on Wake Island shall present his operator's permit to any peace officer, for inspection, upon request.

§ 935.140 Motor vehicle maintenance and equipment.

(a) Each person who has custody of a motor vehicle on Wake Island shall present that vehicle for periodic safety inspection, as required by the Commander.

(b) No person may operate a motor vehicle on Wake Island unless it is in a condition that the Commander considers to be safe and operable.

(c) No person may operate a motor vehicle on Wake Island unless it is equipped with an adequate and properly functioning—

(1) Horn;

(2) Wiper, for any windshield;

(3) Rear vision mirror;

(4) Headlights and taillights;

(5) Brakes;

(6) Muffler;

(7) Spark or ignition noise suppressors, and,

(8) Safety belts.

(d) No person may operate a motor vehicle on Wake Island if that vehicle is equipped with a straight exhaust or muffler cutoff.

Subpart O—Registration and Island Permits

§ 935.150 Registration.

(a) Each person who has custody of any of the following on Wake Island shall register it with the Commander.

(1) A privately owned motor vehicle.

(2) A privately owned boat.

(3) An indigenous animal, military working dog, or guide dog for the blind or visually-impaired accompanying its owner.

(4) A narcotic or dangerous drug or any poison.

(b) Each person who obtains custody of an article described in paragraph (a)(4) of this section shall register it immediately upon obtaining custody. Each person who obtains custody of any other article described in paragraph (a) of this section shall register it within 10 days after obtaining custody.

§ 935.151 Island permit for boat and vehicle.

(a) No person may use a privately owned motor vehicle or boat on Wake Island unless he has an island permit for it.

(b) The operator of a motor vehicle shall display its registration number on the vehicle in a place and manner prescribed by the Commander.

§ 935.152 Activities for which permit is required.

No person may engage in any of the following on Wake Island unless he has an island permit:

(a) Any business, commercial, or recreational activity conducted for profit, including a trade, profession, calling, or occupation, or an establishment where food or beverage is prepared, offered, or sold for human consumption (except for personal or family use).

(b) The practice of any medical profession, including dentistry, surgery, osteopathy, and chiropractic.

(c) The erection of any structure or sign, including a major alteration or enlargement of an existing structure.

(d) The burial of any human or animal remains, except that fish and bait scrap may be buried at beaches where fishing is permitted, without obtaining a permit.

(e) Keeping or maintaining an indigenous animal.

(f) Importing, storing, generating, or disposing of hazardous materials.

(g) Importing of solid wastes and importing, storing, generating, treating, or disposing of hazardous wastes, as they are defined in the Solid Waste Disposal Act, as amended, 42 U.S.C. 6901 *et seq.*, and its implementing regulations.

Subpart P—Public Safety

§ 935.160 Emergency requirements and restrictions.

In the event of any fire, crash, search and rescue, natural disaster, national peril, radiological hazard, or other calamitous emergency:

(a) No person may impede or hamper any officer or employee of the United States or any other person who has emergency authority;

(b) No unauthorized persons may congregate at the scene of the emergency; and,

(c) Each person present shall promptly obey the instructions, signals, or alarms of any peace officer, fire or crash crew, or other authorized person, and any orders of the Commander.

§ 935.161 Fire hazards.

(a) Each person engaged in a business or other activity on Wake Island shall, at his expense, provide and maintain (in an accessible location) fire extinguishers of the type, capacity, and quantity satisfactory for protecting life and property in the areas under that person's control.

(b) To minimize fire hazards, no person may store any waste or flammable fluids or materials except in a manner and at a place prescribed by the Commander.

§ 935.162 Use of special areas.

The Commander may regulate the use of designated or posted areas on Wake Island, as follows:

(a) Restricted areas—which no person may enter without permission.

(b) Prohibited activities areas—in which no person may engage in any activity that is specifically prohibited.

(c) Special purpose areas—in which no person may engage in any activity other than that for which the area is reserved.

§ 935.163 Unexploded ordnance material.

Any person who discovers any unexploded ordnance material on Wake Island shall refrain from tampering with it and shall immediately report its site to the Commander.

§ 935.164 Boat operations.

The operator of each boat used at Wake Island shall conform to the limitations on its operations as the Commander may prescribe in the public interest.

§ 935.165 Floating objects.

No person may anchor, moor, or beach any boat, barge, or other floating object on Wake Island in any location or manner other than as prescribed by the Commander.

Janet A. Long,

Air Force Federal Register Liaison Officer.

[FR Doc. 00–27325 Filed 10–24–00; 8:45 am]

BILLING CODE 5001–05–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

45 CFR Part 309

RIN 0970–AB73

Tribal Child Support Enforcement Programs

AGENCY: Office of Child Support Enforcement, Administration for Children and Families, Department of Health and Human Services.

ACTION: Notice of proposed rulemaking; open consultations.

SUMMARY: Notice is hereby given for the dates, locations and hotel sites for the final two Tribal consultations on the notice of proposed rulemaking (NPRM) for direct Federal funding of Tribal child support enforcement (CSE) programs which was published in the **Federal Register** on August 21, 2000 (65 FR 50800). In the interest of providing Tribes and Tribal organizations and the public adequate time to review and comment on the NPRM, we modified the standard 60-day comment period by extending it to 120-days. The Federal Office of Child Support Enforcement is sponsoring a total of four consultations with federally recognized Indian Tribes, the general public, and Tribal organizations during the 120-day notice and comment period to receive public comment on the proposed rule. The notice for the first two consultations was published September 13, 2000 in the **Federal Register** (65 FR 55261). The initial consultation was held October 3–5, 2000 in Minneapolis, Minnesota and the second consultation will be held October 24–26, 2000 in Anchorage, Alaska. This notification provides specific information for the final two consultations.

DATES: The final two consultations will be held November 1–3, 2000 in Washington, DC and November 28–30, 2000 in Phoenix, Arizona. The consultations will begin promptly at 9:00 a.m. and end at 4:30 p.m. on the first two days. The final half-day session will begin promptly at 9:00 a.m. and end at 12 noon.

ADDRESSES: The third consultation, November 1–3, 2000, will be held at the Monarch Hotel, 2401 M Street, NW, Washington, DC 20037. The telephone number for reservations is (202) 429–2400. The fourth consultation, November 28–39, 2000, will be held at the Crowne Plaza Hotel, 100 North 1st Street, Phoenix, Arizona 85004. The telephone number for reservations is (602) 333–0000. All interested parties are invited to attend these public consultations. Seating may be limited and will be available on a first-come, first-serve basis. Persons needing special assistance, such as sign language interpretation or other special accommodation, should contact the Deputy Director of the Native American Child Support Enforcement Program, Office of Child Support Enforcement, at the address listed below.

FOR FURTHER INFORMATION CONTACT: Ms. Virginia Apodaca, Deputy Director, Native American Child Support Enforcement Program, Office of Child Support Enforcement, Fourth Floor East, 370 L'Enfant Promenade, SW, Washington, DC 20447 (telephone (202) 401–9376; fax (202) 401–5559; e-mail: vapodaca@acf.dhhs.gov). These are not toll-free numbers. It is expected that there will be only four consultations.

SUPPLEMENTARY INFORMATION: The purpose of these consultations will be to provide an overview of the proposed regulations and the interim final rule to attendees. In addition, public comment will be elicited on the proposed regulation and interim final rule. Federal officials will explain both the proposed rules and interim final rules. Persons who attend the consultations may make oral presentations and/or provide written comments for the record at the consultations, at their option. We encourage persons who make oral presentations at the consultations to submit written comments in support of their presentations.

Agenda

In order to obtain the broadest public participation possible on these proposed rules, the Office of Child Enforcement plans to conduct four public consultations during the 120-day comment period. These consultations are intended to further solicit public comment, Native American and Tribal input on the Native American child support enforcement direct Federal funding proposed rule. The agenda for these consultations consists of two full days where public comments on the proposed rule will be elicited. There will also be a one-half day review of the interim funding application process for those Tribes and Tribal organizations with currently existing comprehensive child support enforcement programs wishing to submit applications for interim funding of these programs.

Public Participation

Members of the public wishing to present oral statements at the consultations should send their requests to Ms. Virginia Apodaca, Deputy Director of the Native American Child Support Enforcement Program, as soon as possible or they may register on site at the beginning of each consultation. Such requests should be made by telephone, fax machine, or mail, as shown above. The Deputy Director of the Native American Program will accommodate all such requests on site by reserving time for presentations. The order of persons making such presentations will be assigned in the order in which the requests are received. Members of the public are encouraged to limit oral statements to five minutes, but extended written statements may be submitted for the record. Members of the public also may submit written statements for inclusion in the public record without presenting oral statements. Such written statements should be sent to the Native American Child Support Enforcement Program Deputy Director, as shown above, by mail or fax at least five business days before each meeting. Minutes of all public meeting and other documents will be available for public inspection and copying at the Department of Health and Human Services (DHHS) fourteen days after the conclusion of each consultation. At DHHS, these documents will be available at the Deputy Director, Native American Child Support Enforcement Program, Office of Child Support Enforcement (OCSE), Administration for Children and Families, U.S. Department of Health and Human Services, Aerospace Building, Fourth Floor—East, 370 L'Enfant Promenade, SW, Washington, DC from 9 a.m. to 5 p.m. Questions regarding the availability of documents from DHHS should be directed to Virginia Apodaca, OCSE (telephone (202) 401–9376). This is not a toll-free number. Any written comments on the minutes should be directed to Ms. Virginia Apodaca, Deputy Director of the Native American Child Support Enforcement Program, as shown above.

Dated: October 18, 2000.

David Gray Ross,

Commissioner, Office of Child Support Enforcement.

[FR Doc. 00–27438 Filed 10–24–00; 8:45 am]

BILLING CODE 4184–01–M

DEPARTMENT OF DEFENSE

48 CFR Part 225

[DFARS Case 99–D005]

Defense Federal Acquisition Regulation Supplement; Foreign Military Sales Customer Observation of Negotiations

AGENCY: Department of Defense (DoD).

ACTION: Proposed rule; withdrawal.

SUMMARY: DoD is withdrawing the proposed rule published at 64 FR 22825 on April 28, 1999. The rule proposed to amend the Defense Federal Acquisition Regulation Supplement (DFARS) to allow Foreign Military Sales (FMS) customers to observe contract price negotiations. This change was proposed as a part of a DoD initiative to improve the FMS process. DoD has reconsidered this rule based on public comments. DoD is considering alternative methods of satisfying the pricing information needs of countries that acquire supplies and services through the FMS program. Therefore, DoD is withdrawing the proposed rule.

FOR FURTHER INFORMATION CONTACT: Ms. Amy Williams, Defense Acquisition Regulations Council, OUSD (AT&L) DP (DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062. Telephone (703) 602–0288; telefax (703) 602–0350. Please cite DFARS Case 99–D005.

Michele P. Peterson,

Executive Editor, Defense Acquisition Regulations Council.

[FR Doc. 00–27245 Filed 10–24–00; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 622

[Docket No. 001005281-0281-01; I.D. 082900C]

RIN 0648-AN85

Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic; Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic; 2000-2001 Catch Specifications for Gulf Group King Mackerel

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: In accordance with the framework procedure for adjusting management measures of the Fishery Management Plan for the Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic (FMP), NMFS proposes, for Gulf group king mackerel, to reduce the total allowable catch (TAC), reinstate a 2-fish per person daily bag limit for captain and crew of for-hire vessels (charter vessels and headboats), and revise the commercial trip limit applicable within the Florida east coast subzone (Miami-Dade County, FL through Volusia County, FL). The intended effect of this proposed rule is to protect the Gulf group king mackerel stock from overfishing while still allowing catches by the commercial and recreational fisheries. In addition, NMFS proposes a minor change to correct a cross-reference.

DATES: Written comments must be received no later than 4:30 p.m., eastern standard time, on November 24, 2000.

ADDRESSES: Written comments on the proposed rule must be sent to Dr. Steve Branstetter, Southeast Regional Office, NMFS, 9721 Executive Center Drive N., St. Petersburg, FL 33702. Comments also may be sent via fax to 727-570-5583. Comments will not be accepted if submitted via e-mail or Internet.

Comments on any ambiguity or unnecessary complexity arising from the language used in this proposed rule should be directed to Rod Dalton, Southeast Regional Office, at the above address.

Requests for copies of the environmental assessment and regulatory impact review supporting this action should be sent to the Gulf of Mexico Fishery Management Council, 3018 U.S. Highway North, Suite 1000, Tampa, FL, 33619-2266, telephone: 813-228-2815, fax: 813-225-7015, e-mail: gulfcouncil@gulfcouncil.org.

FOR FURTHER INFORMATION CONTACT: Dr. Steve Branstetter, telephone: 727-570-5305, fax: 727-570-5583, e-mail: Steve.Branstetter@noaa.gov.

SUPPLEMENTARY INFORMATION: The fisheries for coastal migratory pelagic resources are regulated under the FMP. The FMP was prepared jointly by the Gulf of Mexico and South Atlantic Fishery Management Councils and was approved by NMFS and implemented by regulations at 50 CFR part 622.

In accordance with the FMP's framework procedure, the Gulf of Mexico Fishery Management Council (Gulf Council) and South Atlantic Fishery Management Council (South Atlantic Council) submitted to the Regional Administrator, Southeast Region, NMFS, a regulatory amendment that contained recommendations for changes in the catch specifications for Gulf migratory group king mackerel. The recommended changes are within the scope of the management measures that may be adjusted under the framework procedure, as specified in 50 CFR 622.48.

Background

Total Allowable Catch (TAC) for Gulf Group King Mackerel

In setting TAC, the Gulf Council considered the comments of its Mackerel Stock Assessment Panel (MSAP), Socioeconomic Panel, Scientific and Statistical Committee, Mackerel Advisory Panel, public testimony, and legal requirements of the Sustainable Fisheries Act. The MSAP concluded that there is only a 33-percent chance that the stock is undergoing overfishing, and only a 35-percent chance the stock is overfished. Currently, the FMP's target for optimum yield (OY) for this stock is a fishing mortality rate that would produce a 30-percent static spawning potential ratio (F30% static SPR). Based on an F30% static SPR, the MSAP calculated a range of allowable biological catch (ABC) of 8.2 to 12.8 million lb (3.7 to 5.8 million kg). The Gulf Council chose the mid-point of the ABC range (10.2 million lb (4.6 million kg)), which has a 50-percent chance of not exceeding the fishing mortality that would allow the stock to reach the OY target (an F > F30% static SPR). This TAC represents a slight reduction from the existing TAC of 10.6 million lb (4.8 million kg).

The Gulf Council considers the TAC reduction from 10.6 million lb (4.8 million kg) to 10.2 million lb (4.6 million kg) sufficient to allow continued rebuilding of the Gulf group king mackerel stock while minimizing the social and economic impacts of the TAC reduction. Additionally, the Gulf Council recognized that benefits of reduced fishing mortality on the stock are accruing from the use of bycatch reduction devices in the shrimp fishery and the recent increase in the minimum size limit to 24 inches (61.0 cm) fork length.

Bag Limit for Captains and Crews of For-Hire Vessels

The recreational sector annually exceeded its allocation between the 1986-1987 and 1996-1997 fishing years. In early 1998, preliminary information for the 1997-1998 fishing year indicated that the recreational sector had again exceeded its allocation, even though the TAC had been increased to 10.6 million lb (4.8 million kg). In an effort to bring the recreational catch within the allocation, the Gulf Council proposed in 1998, and NMFS implemented in 1999, a zero-fish bag limit of Gulf group king mackerel for captains and crews of for-hire vessels. Updated and final information on the 1997-1998 fishing year indicated that the recreational sector did not exceed its 7.21 million lb (3.27 million kg) allocation during the 1997-1998 fishing year, as had been previously reported. Subsequently, the recreational sector did not exceed its allocation during the 1998-1999 fishing year, and although the 2000 stock assessment was conducted prior to the end of the 1999-2000 fishing year, projections indicated that the recreational sector again would not exceed its allocation.

Based on the results of the NMFS 2000 stock assessment, which indicated that the health of the stock of Gulf group king mackerel is continuing to improve, and that the recreational sector is maintaining harvest within its allocation of TAC, the Gulf Council concluded that it was unnecessary to continue efforts to constrain the recreational harvest through the use of a zero-fish bag limit of Gulf group king mackerel for captains and crews of for-hire vessels.

Flexible Trip Limit Schedule for the Atlantic Sub-zone

The commercial fishery participants in the Florida east coast subzone of the Eastern Zone have asked for conservative measures regarding their trip limits, so that they are assured a steady harvest of fish for the entire season. However, the fishery has fallen short of meeting its quota for Gulf group king mackerel in all but 2 of the last 10 years. The trip limit appears to be one factor restricting the opportunity to harvest the quota. The South Atlantic Council has proposed a more flexible trip limit system whereby the commercial trip limit would increase from 50 to 75 fish on February 1, if less than 75 percent of the annual quota has been taken. This action is intended to allow fishermen a greater opportunity to meet their quota, while maintaining stability in the fishery for the majority of the season.

Change Proposed by NMFS

In § 622.44, paragraph (d)(4)(i) would be revised to correct an incorrect cross reference ''paragraph (e)(1)'' should read ''paragraph (d)(1)''.

Classification

This proposed rule has been determined to be not significant for purposes of Executive Order 12866.

The Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities, as follows:

The proposed rule would change the catch specifications for Gulf group king mackerel by setting total allowable catch, establish a 2-fish per person per day bag limit for the captain and crew of for-hire vessels, and establish a flexible trip limit for the East Coast subzone of the Eastern Zone (Miami-Dade through Volusia Counties, Florida) to 75 fish if the quota is not 75 percent filled as of February 1.

The Magnuson-Stevens Fishery Conservation and Management Act provides the statutory basis for the rule. The rule would contribute to the attainment of three of the eight basic objectives of the FMP, namely to stabilize yield at MSY, to provide a flexible management system, and to optimize the economic and social benefits of the coastal migratory pelagic fisheries.

One action would reduce the TAC for Gulf group king mackerel from 10.6 million lb (4.63 million kg) to 10.2 million lb (4.81 million kg). Another action would increase the bag limit for the captain and crew of for-hire vessels harvesting Gulf group king mackerel from zero to two fish per person per day. The final action would revise the trip limit for Gulf group king mackerel in the Florida east coast subzone of the Eastern Zone (Miami-Dade through Volusia Counties, Florida). The revision would replace the current fixed trip limit of 50 fish that applies for the entire season with a system whereby the trip limit will increase to 75 fish on February 1 if 75 percent of the area quota has not been harvested as of February 1 of any given year.

In the Gulf area, 1,440 commercial vessels have permits to fish for king mackerel. The size of these vessels ranges from an average of 29 ft (8.8 m) in Alabama to 41 ft (12.5 m) in Texas. They report an average of about $15,000 in gross sales of all species of fish, but the gross revenues are extremely variable with sales as low as $300 and ranging above $200,000. Profits are similarly variable, and the range is from a loss of about $25,000 to profits approaching $200,000. The vessels at the low and high end of profits can be considered as ''outliers'', and there are only a small, but unknown number of vessels operating at the extremes of the profit range. It should also be noted that these vessels are not totally dependent upon king mackerel sales, and king mackerel sales account for about 33 percent of total sales. There are 1,113 for-hire vessels that have permits allowing the customers to harvest king mackerel. Most of the craft are traditional charter boats. They have an average length of 39 ft (11.9 m), generate average sales of about $69,000, and have returns over variable costs of about $15,000. All the commercial and for-hire harvesting units are classified as representing small business entities. The total number of small entities is somewhat less than the implied total of 2,553 because some firms own more than one commercial or for-hire vessel.

The action to reduce the TAC will result in a maximum reduction in commercial catches of 128,000 lb (58,060 kg) valued at $149,000 or about $103 for the average vessel. Since the average vessel generates about $15,000 in sales from all species of fish, the loss translates into an overall loss of less than one percent of sales and profits. It is noted that the revenues of the vessels show considerable variability, so some vessels are undoubtedly impacted to a larger degree than shown by the averages. However, as was noted earlier, king mackerel sales account for 33 percent of total sales, indicating that these vessels participate in other fisheries, especially because the king mackerel fishery is seasonal and fishing ceases due to the commercial quota being reached in one or more sub-zones. The effect of the lower commercial quota would be evidenced by a slightly earlier closure of the commercial mackerel fishery in those years when the quota is reached. At that point, the affected vessels would switch to their alternate fisheries. In the western Gulf of Mexico, where the quota is most often met, one of the main alternate fisheries is yellowfin tuna, a species not under quota. Because of this historical fishing behavior, the short term effect of the slightly reduced quota will be mitigated. In addition, the commercial quota is not always taken, but is taken in some years, including the most recent fishing year. Nonetheless, for the reasons outlined, even if the maximum loss of $103 per vessel in terms of king mackerel sales occur, it is unlikely that vessels will be negatively impacted to the extent that they have to cease fishing.

The action to allow a 2-fish bag limit for the captain and crew of for-hire vessels will provide benefits to the for-hire operations. Particularly in the area of the Florida Keys, the sale of king mackerel by the for-hire vessels adds to overall vessel and/or crew income. It is estimated that the positive impact will amount to a 2.6 to 4.3 percent increase in gross revenues for the for-hire vessels. The recreational sector is not under a strict quota such that the fishery is closed when the recreational allocation is taken. In addition, the recreational allocation, even under a slightly reduced TAC circumstance, will not likely be taken. Therefore, the expectation of an overall increase in catches by the for-hire sector will have no offsetting negative impacts.

The action to allow for an increase in the trip limit for those commercial fishermen operating in the Florida east coast subzone, if 75 percent of their quota is not taken by February 1, could increase their catches by a small but unknown amount. Since this particular group of commercial fishermen does not generally take their quota, they stand to benefit from the more generous trip limit. However, overall mackerel catches by all fishermen combined will not increase. This result would be expected because although there are a number of different quotas for king mackerel, the instances where any particular group exceeds its allocation are becoming rare. The monitoring system has been improved, and fishing under various quotas will cease because of the enhanced ability of fishery managers to monitor and close the relevant areas. Hence, this accounts for the most likely outcome whereby the somewhat enhanced trip limits for the east coast sub-zone fishermen slightly enhances their incomes but with no change in overall revenues from king mackerel for all king mackerel fishermen combined.

The criteria used to determine the possibility of a significant impact included disproportionality and profitability. As described earlier, although it is recognized that the small entities have varying revenues and profits, all the impacted entities are deemed to be small so there are no differential small versus large impacts. Since the analysis shows that revenues, and profits, for the commercial small entities will decline by less than 1 percent, the economic impacts on small entities are deemed to be not significant. Some small entities, including the for-hire firms and those commercial fishermen who harvest king mackerel in the east coast of Florida, will be positively impacted to a small degree. Also, per the earlier discussion, all the entities to be impacted are classified as small, so a significant number will be negatively impacted by the reduction in TAC, albeit by an amount that is not significant.

Accordingly, an initial regulatory flexibility analysis was not prepared. NMFS prepared an RIR and copies are available (see **ADDRESSES**).

The President has directed Federal agencies to use plain language in their communications with the public, including regulations. To comply with this directive, we seek public comment on any ambiguity or unnecessary complexity arising from the language used in this proposed rule. Such comments should be sent to the Southeast Regional Office (see **ADDRESSES**).

List of Subjects in 50 CFR Part 622

Fisheries, Fishing, Puerto Rico, Reporting and recordkeeping requirements, Virgin Islands.

Dated: October 16, 2000.

Penelope D. Dalton,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 622 is proposed to be amended as follows:

PART 622—FISHERIES OF THE CARIBBEAN, GULF, AND SOUTH ATLANTIC

1. The authority citation for part 622 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

2. In § 622.39, paragraph (c)(1)(ii) is revised to read as follows:

§ 622.39 Bag and possession limits.

* * * * *

(c) * * *

(1) * * *

(ii) Gulf migratory group king mackerel--2.

* * * * *

3. In § 622.42, paragraph (c)(1)(i) is revised to read as follows:

§ 622.42 Quotas.

* * * * *

(c) * * *

(1) * * *

(i) *Gulf migratory group*. The quota for the Gulf migratory group of king mackerel is 3.26 million lb (1.48 million kg). The Gulf migratory group is divided into eastern and western zones separated by 87°31'06'' W. long., which is a line directly south from the Alabama/Florida boundary. Quotas for the eastern and western zones are as follows:

(A) Eastern zone—2.25 million lb (1.02 million kg), which is further divided into quotas as follows:

(*1*) Florida east coast subzone—1,040,625 lb (472,020 kg).

(*2*) Florida west coast subzone. (*i*) Southern—1,040,625 lb (472,020 kg), which is further divided into a quota of 520,312 lb (236,010 kg) for vessels fishing with hook-and-line and a quota of 520,312 lb (236,010 kg) for vessels fishing with run-around gillnets.

(*ii*) Northern—168,750 lb (76,544 kg).

(*3*) Description of Florida subzones. The Florida east coast subzone is that part of the eastern zone north of 25°20.4' N. lat., which is a line directly east from the Miami-Dade/Monroe County, FL, boundary. The Florida west coast subzone is that part of the eastern zone south and west of 25°20.4' N. lat. The Florida west coast subzone is further divided into southern and northern subzones. From November 1 through March 31, the southern subzone is that part of the Florida west coast subzone that extends south and west from 25°20.4' N. lat. to 26°19.8' N. lat., a line directly west from the Lee/Collier County, FL, boundary (i.e., the area off Collier and Monroe Counties). From April 1 through October 31, the southern subzone is that part of the Florida west coast subzone that is between 26°19.8' N. lat. and 25°48' N. lat., which is a line directly west from the Monroe/Collier County, FL, boundary (i.e., off Collier County). The northern subzone is that part of the Florida west coast subzone that is between 26°19.8' N. lat. and 87°31'06'' W. long., which is a line directly south from the Alabama/Florida boundary.

(B) Western zone—1.01 million lb (0.46 million kg).

* * * * *

4. In § 622.44, paragraphs (a)(2)(i) and (d)(4)(i) are revised to read as follows:

§ 622.44 Commercial trip limits.

* * * * *

(a) * * *

(2) * * *

(i) *Eastern zone—Florida east coast subzone.* In the Florida east coast subzone, king mackerel in or from the EEZ may be possessed on board at any time or landed in a day from a vessel with a commercial permit for king mackerel as required under § 622.4(a)(2)(iii) as follows:

(A) From November 1 through January 31--not to exceed 50 fish.

(B) Beginning on February 1 and continuing through March 31—

(*1*) If 75 percent or more of the Florida east coast subzone quota as specified in § 622.42(c)(1)(i)(A)(*1*) has been taken—not to exceed 50 fish.

(*2*) If less than 75 percent of the Florida east coast subzone quota as specified in § 622.42(c)(1)(i)(A)(*1*) has been taken—not to exceed 75 fish.

* * * * *

(d) * * *

(4) * * *

(i) May not possess red snapper in or from the Gulf in excess of the appropriate vessel trip limit, as specified in paragraphs (d)(1) through (d)(3) of this section.

* * * * *

[FR Doc. 00–27076 Filed 10–24–00; 8:45 am]
BILLING CODE 3510–22–S

Notices

Federal Register

Vol. 65, No. 207

Wednesday, October 25, 2000

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

[PY–00–001]

U.S. Trade Descriptions for Poultry

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Notice of publication of U.S. Trade Description Tentative Standards for Poultry with request for comments.

SUMMARY: The Agricultural Marketing Service (AMS) is publishing the United States (U.S.) Trade Descriptions for Poultry. The U.S. Trade Descriptions for Poultry establish voluntary trade standards for ready-to-cook chicken products produced in the U.S. The descriptions are intended to facilitate wholesale trading of poultry by providing a tool to better communicate product and packaging requirements among buyers and sellers. Comments are requested regarding the description's effectiveness, ease of use, and technical accuracy.

DATES: Use of the descriptions will begin on October 25, 2000 and will continue until AMS makes a final determination about the usefulness of the tentative standards. Comments must be received on or before April 23, 2001.

FOR FURTHER INFORMATION CONTACT: Questions and written comments may be submitted to David Bowden, Chief, Standardization Branch, Poultry Programs, Agricultural Marketing Service, United States Department of Agriculture, Room 3944-South Building, STOP 0259, 1400 Independence Avenue, SW, Washington, DC 20250–0259; faxed to (202) 690–0941; or e-mailed to pydocket@usda.gov. State that your comments refer to Docket No. PY–00–001. Comments received may be viewed over the Internet at

www.ams.usda.gov/poultry/regulations/rulemaking/index.htm or at the address above between 8 a.m. and 4:30 p.m., Eastern Time, Monday through Friday, except holidays.

Copies of the tentative U.S. Trade Descriptions for Poultry are available over the Internet at www.ams.usda.gov/poultry/regulations/rulemaking/index.htm or by writing the address above, by faxing (202) 690–0941, or by phoning (202) 720–3506. A fee will be charged for color copies of the standard to recover the cost of printing and distribution.

SUPPLEMENTARY INFORMATION:

Background

The Agricultural Marketing Act of 1946, as amended (7 U.S.C. 1621 *et seq.*) authorizes USDA to develop and maintain agricultural commodity standards to facilitate the domestic and international trading of U.S. agricultural products. In 1998, the USA Poultry and Egg Export Council, an industry trade organization, expressed interest in having AMS develop voluntary U.S. standards to facilitate the domestic and international wholesale trading of ready-to-cook poultry produced in the United States. AMS is calling these standards ''U.S. Trade Descriptions for Poultry'' and will maintain them as AMS 71.

Currently, AMS maintains voluntary standards that define quality grade levels for poultry products by limiting or excluding product defects such as broken or disjointed bones, exposed flesh, meat and skin discoloration, and freezing defects. AMS 71 U.S. Trade Descriptions for Poultry differ from these standards in that they describe the composition of poultry products by defining characteristics such as which parts of the bird are included, whether bone and skin are present, and how the product is packaged and packed. The two standards may be used in conjunction with each other.

Although AMS intends to develop trade descriptions for all commonly traded poultry products, descriptions for ready-to-cook chicken products are the first to be available for industry use. These standards consist of word and picture descriptions for over 70 chicken product styles and define a numeric coding system that communicates product and packaging characteristics for products to be traded. The descriptions were developed in cooperation with the poultry industry, including national industry organizations.

A seller may self-certify that delivered product satisfies all product and packaging characteristics of the trade description specified by the buyer. For additional assurance, however, the buyer or seller may request that AMS examine and officially certify that the product meets the specified U.S. trade description requirements. The AMS Poultry Grading Service has procedures for certifying that products meet the requirements of the U.S. trade descriptions. This service is available for both officially graded and non-graded products.

AMS believes that the effectiveness and usefulness of a new standard will be best determined through industry use. For this reason, AMS is providing interested parties with 180 days to comment on their effectiveness, ease of use, and technical accuracy.

After the comment period has closed, the Agency will evaluate comments received and other information to determine if the tentative U.S. Trade Descriptions for Poultry should be modified or become official. Once determined, the Agency's decision will be published as a notice in the **Federal Register**.

AMS encourages high-volume wholesale buyers and sellers of chicken to use the tentative standards to define the products they trade. They can do so by obtaining a copy of the trade descriptions and using the product definitions and numeric codes in the trade descriptions to identify all product and packaging requirements for the products they wish to trade. This code can then be incorporated into the contract with wording such as ''Product and packaging shall meet requirements of U.S. Trade Description No. 70101–13–11140001270–1*01100114–184001816–0.'' An Internet web site will be developed by AMS to provide on-line, interactive assistance with the specification and documentation process.

Interested parties can obtain further information or assistance in the use of the trade descriptions by contacting the Poultry Programs Standardization Branch by e-mail (Carmen.Humphrey@usda.gov), fax (202 690–0941), or phone (202 720–3506).

Dated: October 18, 2000.

Kathleen A. Merrigan,

Administrator, Agricultural Marketing Service.

[FR Doc. 00–27412 Filed 10–24–00; 8:45 am]

BILLING CODE 3410–02–P

DEPARTMENT OF COMMERCE

Submission for OMB Review; Comment Request

AGENCY: U.S. Census Bureau.

DOC has submitted to the Office of Management and Budget (OMB) for clearance the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. chapter 35).

Title: Advance Monthly Retail Sales Survey.

Form Number(s): SM–44(00)A, SM–44(00)AS, SM–44(00)AE, SM–72(00)A.

Agency Approval Number: 0607–0104.

Type of Request: Revision of a currently approved collection.

Burden: 4,500 hours.

Number of Respondents: 4,500.

Avg Hours Per Response: 5 minutes.

Needs and Uses: The Advance Monthly Retail Sales Survey (MARTS) provides an early indication of current retail sales activity at the United States level. Policymakers such as the Federal Reserve Board need to have the most timely estimates in order to anticipate economic trends and act accordingly. The Bureau of Economic Analysis (BEA), the Council of Economic Advisors (CEA), and other government agencies and businesses use the data to formulate economic policy and make decisions. These estimates have a high BEA priority because of their timeliness. There would be approximately a month delay in the availability of these data if this survey were not conducted. Data are collected monthly from small, medium, and large size businesses, selected using a stratified random sampling procedure. The MARTS sample is re-selected periodically, generally at two year intervals. Small and medium-size retailers are requested to participate for those two years, after which they are replaced with new panel members. Smaller firms have less of a chance for selection due to our sampling procedure. We are increasing the sample size from 4,100 to 4,500 to improve the quality of the estimates.

This request is for the clearance of four similar report forms SM–44(00)A; SM–44(00)AE; SM–44(00)AS & SM–72(00)A which will be replacing the form B–104 previously used to collect data in this survey on the Standard Industrial Classification (SIC) basis. The new forms will enable us to collect information on the North American Industry Classification System (NAICS) basis. All forms request similar data items but a variety of forms is needed to either address collecting E-commerce sales or the firm's specific kind-of-business.

Affected Public: Businesses or other for-profit organizations.

Frequency: Monthly.

Respondent's Obligation: Voluntary.

Legal Authority: Title 13 U.S.C., Section 182.

OMB Desk Officer: Susan Schechter, (202) 395–5103.

Copies of the above information collection proposal can be obtained by calling or writing Madeleine Clayton, Departmental Forms Clearance Officer, (202) 482–3129, Department of Commerce, room 6086, 14th and Constitution Avenue, NW., Washington, DC 20230 (or via the Internet at mclayton@doc.gov).

Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to Susan Schechter, OMB Desk Officer, room 10201, New Executive Office Building, Washington, DC 20503.

Dated: October 20, 2000.

Madeleine Clayton,

Departmental Forms Clearance Officer, Office of the Chief Information Officer.

[FR Doc. 00–27423 Filed 10–24–00; 8:45 am]

BILLING CODE 3510–07–P

DEPARTMENT OF COMMERCE

Economic Development Administration

Notice of Petitions by Producing Firms for Determination of Eligibility To Apply for Trade Adjustment Assistance

AGENCY: Economic Development Administration (EDA), Commerce.

ACTION: To give firms an opportunity to comment.

Petitions have been accepted for filing on the dates indicated from the firms listed below.

LIST OF PETITION ACTION BY TRADE ADJUSTMENT ASSISTANCE FOR PERIOD AUGUST 16, 2000–SEPTEMBER 22, 2000

Firm name	Address	Date petition accepted	Product
Compol, Inc	415 Campbell Mill Road, Mason, NH 03048	28–Sep–2000	Special purpose radio receivers utilizing sub frequencies for use of targeted segments of the general public.
BGF Industries Inc	3802 Robert Porcher Way, Greensboro, NC 27410.	28–Sep–2000	Fiberglass fabric for the electronics, automotive, aerospace and marine industries.
Nelson-Whittaker, Ltd. dba, Central Specialties, Ltd.	220–D Exchange Drive, Crystal Lake, IL 60014.	28–Sep–2000	Metal stands for trays or luggage.
Aneco Trousers Corporation	713 Linden Avenue, Hanover, PA 17331	28–Sep–2000	Men's trousers of wood and wool blend material.
Datatest, Inc	6850 Hibbs Lane, Levittown, PA 19057	28–Sep–2000	Instruments for measuring variables of liquids or gases.
Cozzoli Machine Company	401 East Third Street, Plainfield, NJ 07060	28–Sep–2000	Custom filling machinery and systems.
Taos Drum Company	3956 Hwy 68, Ranchos de Taos, Taos, NM 87557.	29–Sep–2000	Native drums.
Superior Gearbox Co., Inc	803 West Hwy. 32, Stockton, MO 65785	02–Oct–2000	Right-angle gearboxes and pump drives.
Santa Fe Furniture Co. dba, Taos Furniture Co.	1807 Second Street, Santa Fe, NM 87505	02–Oct–2000	Furniture of wood for bedrooms, dining rooms and entertainment centers.
E&S Equipment, Inc	109 Skyland Drive, Norman, OK 73071	02–Oct–2000	Valve parts.
Electron Corporation (The)	5101 S. Rio Grande Street, Littleton, CO 80120.	02–Oct–2000	Gray and ductile iron castings.
Sassco, Inc. dba Taku Smokeries, dba Taku Fisheries.	550 S. Franklin Street, Juneau, AK 99801	02–Oct–2000	Fresh and frozen seafood.

LIST OF PETITION ACTION BY TRADE ADJUSTMENT ASSISTANCE FOR PERIOD AUGUST 16, 2000–SEPTEMBER 22, 2000—Continued

Firm name	Address	Date petition accepted	Product
Alexander & Baldwin, Inc	P.O. Box 266, Puunene, HI 96784	02–Oct–2000	Sugar and molasses.
Garland Industries, Inc	One South Main Street, Coventry, RI 02816.	03–Oct–2000	Pens and mechanical pencils.
Infra-Red Technologies, Inc	1201 Burlington Street, N. Kansas City, MO 64116.	06–Oct–2000	Gas catalytic and electric infrared heating equipment.
J.N. White Associates, Inc ...	135 N. Center Street, Perry, NY 14530	06–Oct–2000	Screen-print high quality pressure sensitive labels.

The petitions were submitted pursuant to Section 251 of the Trade Act of 1974 (19 U.S.C. 2341). Consequently, the United States Department of Commerce has initiated separate investigations to determine whether increased imports into the United States of articles like or directly competitive with those produced by each firm contributed importantly to total or partial separation of the firm's workers, or threat thereof, and to a decrease in sales or production of each petitioning firm.

Any party having a substantial interest in the proceedings may request a public hearing on the matter. A request for a hearing must be received by Trade Adjustment Assistance, Room 7315, Economic Development Administration, U.S. Department of Commerce, Washington, D.C. 20230, no later than the close of business of the earth calendar day following the publication of this notice.

The Catalog of Federal Domestic Assistance official program number and title of the program under which these petitions are submitted is 11.313, Trade Adjustment Assistance.

Dated: October 17, 2000.

Anthony J. Meyer,

Coordinator, Trade Adjustment and Technical Assistance.

[FR Doc. 00–27371 Filed 10–24–00; 8:45 am]

BILLING CODE 3510–24–M

DEPARTMENT OF COMMERCE

International Trade Administration

[A–122–601]

Brass Sheet and Strip From Canada: Notice of Recission of Antidumping Duty Administrative Review

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

ACTION: Notice of recission of antidumping duty administrative review.

EFFECTIVE DATE: October 25, 2000.

SUMMARY: On February 28, 2000, the Department of Commerce (the Department) published in the **Federal Register** (65 FR 10466) a notice announcing the initiation of an administrative review of the antidumping duty order on brass sheet and strip from Canada, covering the period January 1, 1999 through December 31, 1999, and one manufacturer/exporter of the subject merchandise, Wolverine Tube (Canada), Inc. We are now rescinding this review as a result of the petitioners' withdrawal of their request for an administrative review.

FOR FURTHER INFORMATION CONTACT: Alexander Amdur, AD/CVD Enforcement, Group II, Office IV, Import Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230, telephone: (202) 482–5346.

SUPPLEMENTARY INFORMATION:

The Applicable Statute

Unless otherwise indicated, all citations to the Tariff Act of 1930, as amended (''the Act''), are references to the provisions effective January 1, 1995, the effective date of the Uruguay Round Agreements Act. In addition, unless otherwise indicated, all citations to the Department's regulations are to the regulations at 19 CFR Part 351 (1999).

Background

On January 28, 2000, Olin Corporation, Outokumpu American Brass, Revere Copper Products, Inc., the International Association of Machinists and Aerospace Workers, the United Auto Workers (Local 2367) and the United Steelworkers of America (AFL–CIO/CLC) (collectively, petitioners), in accordance with 19 CFR 351.213(b), requested an administrative review of the antidumping duty order on brass sheet and strip from Canada covering Wolverine Tube (Canada), Inc. On February 17, 2000, in accordance with 19 CFR 351.221(c)(1)(i), we initiated an administrative review of this order for the period January 1, 1999 through December 31, 1999 (65 FR 10466, February 28, 2000). On September 19, 2000, the petitioners withdrew their request for this review. Additionally, on October 2, 2000, Wolverine Tube (Canada), Inc. and Wolverine Ratcliffs Inc. informed the Department that they do not object to the termination of the current administrative review.

Recission of Review

The Department's regulations at 19 CFR 351.213(d)(1) provide that the Department will rescind an administrative review if the party that requested the review withdraws its request for review within 90 days of the date of publication of the notice of initiation of the requested review, or withdraws its request at a later date if the Department determines that it is reasonable to extend the time limit for withdrawing the request. The petitioners withdrew their request for review after the 90 day period. However, the Department has granted the request to rescind the review because the petitioners were the only party to request the review, and it is otherwise reasonable to rescind the review based on the petitioners' withdrawal of their request.

This determination is issued and published in accordance with section 751 of the Act (19 U.S.C. 1675) and 19 CFR 351.213(d)(4).

Dated: October 18, 2000.

Holly A. Kuga,

Acting Deputy Assistant Secretary, Import Administration.

[FR Doc. 00–27445 Filed 10–24–00; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

National Institute of Standards and Technology

Announcement of Meeting and Opportunity To Join the Virtual Cement and Concrete Testing Laboratory Consortium

AGENCY: National Institute of Standards and Technology, Commerce.

ACTION: Notice of public meeting.

SUMMARY: The National Institute of Standards and Technology (NIST) invites interested parties to attend the kick-off meeting of the Virtual Cement and Concrete Testing Laboratory consortium on November 30 and December 1, 2000 to be held at the offices of W.R. Grace & Co. in Cambridge, MA. Meetings will be held Thursday afternoon and Friday morning. The goals of this consortium are to develop an enhanced version of a Virtual Cement and Concrete Testing Laboratory and to further the state-of-the-art in the materials science of cement-based materials. The consortium will be supervised and administered by NIST. Consortium research and development will be conducted by NIST staff members along with at least one technical representative from each participating member company. Membership fees for participation in the consortium are Forty Thousand ($40,000) per year. The initial term of the consortium is intended to be three years. NIST has made available further information on the consortium, including the presentations made at the initial June 14–15 consortium planning meeting, at http://www.bfrl.nist.gov/862/vcctl

DATES: The meeting will take place on November 30, 2000 from 1 PM to 5 PM and on December 1, 2000 from 8 AM to 1 PM in Cambridge, MA.

ADDRESSES: The meeting will be held at the offices of W.R. Grace & Co.-Conn., 62 Whittemore Avenue, Cambridge, MA 02140.

FOR FURTHER INFORMATION CONTACT: Dale P. Bentz, Chair, Virtual Cement and Concrete Testing Laboratory Consortium, National Institute of Standards and Technology, 100 Bureau Drive, Stop 8621, Gaithersburg MD, 20899, USA; Telephone (301) 975—5865; Fax (301) 990–6891; E-mail: dale.bentz@nist.gov.

SUPPLEMENTARY INFORMATION:

Consortium Goals

The goals of this consortium are to develop an enhanced version of the Virtual Cement and Concrete Testing Laboratory and to further the state-of-the-art in the computational materials science of cement-based materials. These goals will be pursued using a combined experimental/computer modeling approach with strong technical supervision and support being provided by the consortium members and the consortium oversight board (one membership per participating company). The developed Virtual Laboratory should result in a substantial reduction in the extensive resources currently employed for the physical testing of cement-based materials and should also expedite the research and development process significantly.

More details on the planned activities are provided in the Virtual Cement and Concrete Testing Laboratory Consortium membership agreement. A preliminary list of topics that will be addressed by the consortium include: (1) Cement hydration and the influence of alkalis, slag, and limestone additions; (2) measurement and modeling of rheological properties including the influence of entrapped and entrained air voids; and (3) prediction of the elastic/visco-elastic properties of cement-based materials.

Background

Over the past twelve years, researchers in the Building Materials Division of NIST have made tremendous strides in the modeling of microstructure and the computation of performance properties of cement-based materials. Currently, NIST is recognized as the undisputed world leader in the ''Computational Materials Science of Concrete.'' Recently, much of this NIST research has been integrated into a prototype Virtual Cement and Concrete Testing Laboratory (VCCTL), which will be made available over the Internet in November or December of 2000. The purpose of the VCCTL is to reduce the necessary number of physical tests and expedite the R&D process.

The center of the prototype VCCTL is the NIST 3–D cement hydration and microstructure development model (CEMHYD3D). Using the web-based interface, a user may create an initial microstructure containing cement, gypsum, mineral admixtures, and inert fillers following a specific particle size distribution, hydrate the microstructure under a variety of curing (temperature and saturation) conditions, and evaluate the properties of the simulated microstructures for direct comparison to experiment. Furthermore, hydrated microstructures may be degraded using an NIST-developed leaching algorithm, and diffusion coefficients for chloride ions in concrete predicted based on concrete mixture proportions. As the consortium proceeds, the prediction of rheological properties (viscosity and yield stress) of the fresh materials and elastic properties (elastic modulus, creep, and relaxation) of the hardened materials will be incorporated into the VCCTL.

The Virtual Cement and Concrete Testing Laboratory Consortium is to be chaired by Dale P. Bentz of NIST.

Dated: October 18, 2000.

Raymond G. Kammer,

Director.

[FR Doc. 00–27433 Filed 10–24–00; 8:45 am]

BILLING CODE 3510–13–M

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meeting

AGENCY HOLDING THE MEETING: Commodity Futures Trading Commission.

TIME AND DATE: 1:00 p.m., Monday, October 30, 2000.

PLACE: 1155 21st St., NW., Washington, DC, Lobby Level Hearing Room.

STATUS: Open.

MATTERS TO BE CONSIDERED:

- Final rules for a regulatory framework for Multilateral Transaction Execution Facilities, Intermediaries and Clearing Organizations.
- Final rules relating to Intermediaries of Commodity Interest Transactions.
- Final rules for a New Regulatory Framework for Clearing Organizations.
- Final rules on the Exemption for Bilateral Transactions.

CONTACT PERSON FOR MORE INFORMATION: Jean A. Webb, 202–418–5100.

Jean A. Webb,

Secretary of the Commission.

[FR Doc. 00–27501 Filed 10–20–00; 5:06 pm]

BILLING CODE 6351–01–M

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meeting

TIME AND DATE: 11 a.m., Friday, November 3, 2000.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Surveillance Matters.

FOR FURTHER INFORMATION CONTACT: Jean A. Webb, 202–418–5100.

Jean A. Webb,

Secretary of the Commission.

[FR Doc. 00–27598 Filed 10–23–00; 4:00 pm]

BILLING CODE 6351–01–M

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meeting

TIME AND DATE: 11 a.m., Thursday, November 9, 2000.

PLACE: 1155 21st St., N.W., Washington, D.C., 9th Floor Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Surveillance matters.

CONTACT PERSON FOR MORE INFORMATION: Jean A. Webb, 202–418–5100.

Jean A. Webb

Secretary of the Commission

[FR Doc. 00–27599 Filed 10–23–00; 4:00 pm]

BILLING CODE 6351–01–M

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meeting

TIME AND DATE: 11 a.m., Friday, November 17, 2000.

PLACE: 1155 21st St., N.W., Washington, D.C., 9th Floor Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Surveillance Matters.

CONTACT PERSON FOR MORE INFORMATION: Jean A. Webb, 202–418–5100.

Jean A. Webb,

Secretary of the Commission.

[FR Doc. 00–27600 Filed 10–23–00; 4:00 pm]

BILLING CODE 6351–01–M

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meeting

TIME AND DATE: 11 a.m., Friday, November 24, 2000.

PLACE: 1155 21st St., N.W., Washington, D.C., 9th Floor Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Surveillance Matters.

CONTACT PERSON FOR MORE INFORMATION: Jean A. Webb, 202–418–5100.

Jean A. Webb,

Secretary of the Commission.

[FR Doc. 00–27601 Filed 10–23–00; 4:00 pm]

BILLING CODE 6351–01–M

DEPARTMENT OF DEFENSE

[OMB Control Number 0704–0229]

Information Collection Requirement; Defense Federal Acquisition Regulation Supplement; Foreign Acquisition

AGENCY: Department of Defense (DoD).

ACTION: Notice and request for comments regarding a proposed extension of an approved information collection requirement.

SUMMARY: In compliance with Section 3506(c)(2)(A) of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35), DoD announces the proposed extension of a public information collection requirement and seeks public comment on the provisions thereof. DoD invites comments on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of DoD, including whether the information will have practical utility; (b) the accuracy of the estimate of the burden of the proposed information collection; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the information collection on respondents, including the use of automated collection techniques or other forms of information technology. The Office of Management and Budget (OMB) has approved this information collection for use through April 30, 2001. DoD proposes that OMB extend its approval for use through April 30, 2004.

DATES: DoD will consider all comments received by December 26, 2000.

ADDRESSES: Interested parties should submit written comments and recommendations on the proposed information collection to: Defense Acquisition Regulations Council, Attn: Ms. Amy Williams, OUSD(AT&L)DP(DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062. Telefax (703) 602–0350.

E-mail comments submitted via the Internet should be addressed to: dfars@acq.osd.mil.

Please cite OMB Control Number 0704–0229 in all correspondence related to this issue. E-mail comments should cite OMB Control Number 0704–0229 in the subject line.

FOR FURTHER INFORMATION CONTACT: Ms. Amy Williams, (703) 602–0288. The information collection requirements addressed in this notice are available electronically via the Internet at: http://www.acq.osd.mil/dp/dars/dfars.html. Paper copies are available from Ms. Amy Williams, OUSD(AT&L)DP(DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062.

SUPPLEMENTARY INFORMATION: *Title, Form, and OMB Number:* Foreign Acquisition—Defense Federal Acquisition Regulation Supplement Part 225 and Related Clauses at 252.225; DD Form 2139; OMB Control Number 0704–0229.

Needs and Uses: DoD needs this information to ensure compliance with restrictions on the acquisition of foreign products imposed by statute or policy to protect the industrial base; to ensure compliance with U.S. trade agreements and memoranda of understanding that promote reciprocal trade with U.S. allies; and to prepare reports for submission to the Department of Commerce on the Balance of Payments Program.

Affected Public: Businesses or other for-profit and not-for-profit institutions.

Annual Burden Hours: 74,173.

Number of Respondents: 31,347.

Responses Per Respondent: Approximately 7.

Number of Responses: 223,942.

Average Burden Per Response: .33 hours.

Frequency: On occasion.

Summary of Information Collection

DFARS 252.225–7000, Buy American Act—Balance of Payments Program Certificate, as prescribed in 225.1101(1), requires an offeror to list the item number and country of origin of any qualifying country or nonqualifying country end product that it intends to furnish under the contract.

DFARS 252.225–7003, Information for Duty-Free Entry Evaluation, as prescribed in 225.1101(4), requires an offeror to indicate whether or not it intends to furnish foreign supplies under the contract, other than those that will be accorded duty-free entry under another clause of the contract. If the offeror intends to furnish such foreign supplies, the offeror must indicate whether or not the supplies are in the United States and whether or not the duty on the supplies has been paid. If the duty has not been paid, the offeror must specify the amount included in its offer to cover the duty.

DFARS 252.225–7005, Identification of Expenditures in the United States, as prescribed in 225.1103(1), requires the contractor to identify, on each request for payment under a contract involving a foreign contractor or performance outside the United States, the part of the requested payment representing estimated expenditures in the United States.

DFARS 252.225–7006, Buy American Act—Trade Agreements—Balance of

Payments Program Certificate, as prescribed in 225.1101(5), requires an offeror to list the item number and country of origin of any U.S. made (but not domestic), qualifying country, designated country, Caribbean Basin country, NAFTA country, or other nondesignated country end product that it intends to furnish under the contract.

DFARS 252.225–7009, Duty-Free Entry—Qualifying Country Supplies (End Products and Components), DFARS 252.225–7010, Duty-Free Entry—Additional Provisions, and DFARS 252.225–7037, Duty-Free Entry—Eligible End Products, as prescribed in 225.1101 (8), (9), and (14), respectively, require the contractor to notify the administrative contracting officer upon award of a subcontract for products that are eligible for duty-free entry, and to provide information in shipping documents and customs forms regarding products that are eligible for duty-free entry.

DFARS 252.225–7016, Restriction on Acquisition of Ball and Roller Bearings, as prescribed in 225.7019–4, requires the contractor to retain records showing compliance with the requirement that ball and roller bearings delivered under the contract must be wholly manufactured in the United States or Canada. The contractor must retain the records until 3 years after final payment and must make the records available upon request of the contracting officer. The contractor may request a waiver of the requirement in accordance with DFARS 225.7019–3, which also requires the contractor to submit a written plan for transitioning to domestically manufactured bearings, if the waiver is requested under a multiyear contract or a contract exceeding 12 months.

DFARS 252.225–7018, Notice of Prohibition of Certain Contracts with Foreign Entities for the Conduct of Ballistic Missile Defense RDT&E, as prescribed in 225.7011–5, gives notice of the statutory prohibition on award of a contract to a foreign government or firm, if the contract provides for the conduct of research, development, test, or evaluation in connection with the Ballistic Missile Defense Program. The provision requires an offeror to indicate whether it is or is not a U.S. firm.

DFARS 252.225–7020, Trade Agreements Certificate, as prescribed in 225.1101(10), requires an offeror to list the item number and country of origin of any nondesignated country end product that it intends to furnish under the contract.

DFARS 252.225–7025, Restriction on Acquisition of Forgings, as prescribed in 225.7102–4, requires the contractor to retain records showing compliance with the requirement that end items and their components delivered under the contract must contain domestic forging items. The contractor must retain the records until 3 years after final payment and must make the records available upon request of the contracting officer. The contractor may request a waiver of the requirement in accordance with DFARS 225.7102–3.

DFARS 252.225–7026, Reporting of Contract Performance Outside the United States, as prescribed in 225.7203, requires the contractor to submit a report when any part of the contract that exceeds a specified dollar threshold will be performed outside the United States. The specified threshold is $500,000 for contracts that exceed $10 million, or the simplified acquisition threshold ($100,000) for contracts that exceed $500,000. The contractor may submit the report on DD Form 2139, Report of Contract Performance Outside the United States, or may use a computer-generated report that contains all information required by DD Form 2139.

DFARS 252.225–7032, Waiver of United Kingdom Levies, as prescribed in 225.873–3, requires an offeror to provide information to the contracting officer regarding any United Kingdom levies included in the offered price, and requires the contractor to provide information to the contracting officer regarding any United Kingdom levies to be included in a subcontract that exceeds $1 million, before award of the subcontract.

DFARS 252.225–7035, Buy American Act—North American Free Trade Agreement Implementation Act—Balance of Payments Program Certificate, as prescribed in 225.1101(12), requires an offeror to list any qualifying country, NAFTA country, or other foreign end product that it intends to furnish under the contract.

Michele P. Peterson,

Executive Editor, Defense Acquisition Regulations Council.

[FR Doc. 00–27247 Filed 10–24–00; 8:45 am]

BILLING CODE 5000–04–M

DEPARTMENT OF DEFENSE

[OMB Control Number 0704–0332]

Information Collection Requirement; Defense Federal Acquisition Regulation Supplement; DoD Pilot Mentor-Protege Program

AGENCY: Department of Defense (DoD).

ACTION: Notice and request for comments regarding a proposed revision of an approved information collection requirement.

SUMMARY: In compliance with Section 3606(c)(2)(A) of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35), DoD announces the proposed revision of a public information collection requirement and seeks public comment on the provisions thereof. DoD invites comments on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of DoD, including whether the information will have practical utility; (b) the accuracy of the estimate of the burden of the proposed information collection; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the information collection on respondents, including the use of automated collection techniques or other forms of information technology. The Office of Management and Budget (OMB) has approved this information collection under OMB Control Numbers 0704–0332 (through June 30, 2001) and 0704–0412 (through July 31, 2003). This revision combines the requirements approved under OMB Control Numbers 0704–0332 and 0704–0412. DoD proposed that OMB extend its approval for use through June 30, 2004.

DATES: DoD will consider all comments received by December 26, 2000.

ADDRESSES: Interested parties should submit written comments and recommendations on the proposed information collection to: Defense Acquisition Regulations Council, Attn: Mrs. Susan L. Schneider, OUDS (AT&L) DP (DAR), IMD 3C132, 3062 Defense Pentagon, Washington, DC 20301–3062. Telefax (703) 602–0350.

E-mail comments submitted via the Internet should be addressed to: dfars@acq.osd.mil.

Please cite OMB Control Number 0704–0332 in all correspondence related to this issue. E-mail comments should cite OMB Control Number 0704–0332 in the subject line.

FOR FURTHER INFORMATION CONTACT: Mrs. Susan L. Schneider, at (703) 602–0326. The information collection requirements addressed in this notice are available electronically via the Internet at: http://www.acq.osd.mil/dp/dars/dfars.html. Paper copies are available from Mrs. Susan L. Schneider, OUSD (AT&L) DP (DAR), IMD 3C231, 3062 Defense Pentagon, Washington, DC 20301–3062.

SUPPLEMENTARY INFORMATION:

Title and OMB Number: Defense Federal Acquisition Regulation Supplement (DFARS) Appendix I, DoD

Pilot Mentor-Protege Program; OMB Control Number 0704–0332.

Needs and Uses: DoD needs this information to evaluate whether the purposes of the DoD Pilot Mentor-Protege Program have been met. The purposes of the Program are to: (1) Provide incentives to major DoD contractors to assist protege firms in enhancing their capabilities to satisfy contract and subcontract requirements; (2) increase the overall participation of protege firms as subcontractors and suppliers; and (3) foster the establishment of long-term business relationships between protege firms and major DoD contractors. This Program implements Section 831 of the National Defense Authorization Act for Fiscal Year 1991 (Public Law 101–510) and Section 811 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65) (10 U.S.C. 2302 note). Participation in the Program is voluntary.

Affected Public: Businesses or other for-profit organizations.

Annual Burden Hours: 931 (includes 538 recordkeeping hours).

Number of Respondents: 269.

Responses Per Respondent: 3.

Annual Responses: 393.

Average Burden Per Response: 1 hour reporting; 3.7 hours recordkeeping.

Frequency: Semiannually (mentor); Annually (protege).

Summary of Information Collection

DFARS Appendix I–111(a) requires mentor firms to report on the progress made under active mentor-protege agreements semiannually for the periods ending March 31st and September 30th. The September 30th report must address the entire fiscal year. Reports must include—

(1) Data on performance under the mentor-protege agreement, including dollars obligated, expenditures, credit taken under the Program, small disadvantaged business (SDB) subcontract awards under DoD contracts, developmental assistance provided, impact of the agreement, and progress of the agreement; and

(2) For each contract where developmental assistance was credited toward an SDB subcontracting goal, a copy of Standard Form 294, Subcontracting Report for Individual Contracts, with a statement identifying—

(i) The amount of dollars credited to the SDB subcontracting goal as a result of developmental assistance provided to protege firms under the Program; and

(ii) The number and dollar value of subcontracts awarded to the protege firm(s), broken out per protege.

DFARS Appendix I–111(b) requires the mentor firm and the protege firm to annually provide data on the progress made by the protege firm in employment, revenues, and participation in DoD contracts during each fiscal year of the Program participation term and each of the 2 fiscal years following the expiration of the Program participation term. During the Program participation term, the firms may provide this data as part of the mentor report required by I–111(a) for the period ending September 30th.

Michele P. Peterson,

Executive Editor, Defense Acquisition Regulations Council.

[FR Doc. 00–27248 Filed 10–24–00; 8:45 am]

BILLING CODE 5000–04–M

DEPARTMENT OF DEFENSE

Office of the Secretary

Submission for OMB Review; Comment Request

ACTION: Notice.

The Department of Defense has submitted to OMB for clearance, the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

Title and OMB Number: Central Contractor Registration (CCR); OMB Number 0704–0400.

Type of Request: Revision.

Number of Respondents: 300,000.

Responses Per Respondent: 1.

Annual Responses: 300,000.

Average Burden Per Response: 0.5 hours.

Annual Burden Hours: 150,000.

Needs and Uses: The Central Registration (CCR) provides a single point of entry for vendors that want to do business with the Department of Defense. As of June 1, 1998, both current and potential DoD vendors are required to register in the CCR in order to do business with the DoD if the contract solicitation occurred after May 31, 1998. Vendors are required to complete a one-time registration to provide basic information relevant to procurement and financial transactions. Vendors must update or renew their registration annually to maintain active status. The CCR validates the vendor's information and electronically shares the secure and encrypted data with the Defense Finance and Accounting Service (DFAS) to facilitate paperless payments through electronic funds transfer (EFT). Additionally, CCR shares the data with several government procurement and electronic business systems.

Affected Public: Business or other for-profit; not-for-profit institutions.

Frequency: On occasion and annually.

Respondent's Obligation: Required to obtain and retain benefits.

OMB Desk Officer: Mr. Lewis W. Oleinick.

Written comments and recommendations on the proposed information collection should be sent to Mr. Oleinick at the Office of Management and Budget, Desk Officer for DoD (Acquisition), Room 10236, New Executive Office Building, Washington, DC 20503.

DOD Clearance Officer Mr. Robert Cushing.

Written requests for copies of the information collection proposal should be sent to Mr. Cushing, WHS/DIOR, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202–4302.

Dated: October 19, 2000.

Patricia L. Toppings,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 00–27319 Filed 10–24–00; 8:45 am]

BILLING CODE 5001–10–M

DEPARTMENT OF DEFENSE

Office of the Secretary

Defense Science Board

ACTION: Notice of Advisory Committee meeting.

SUMMARY: The Defense Science Board (DSB) Task Force on Systems Technology for the Future U.S. Strategic Posture will meet in closed session on November 13–14, 2000, at Offutt Air Force Base, Nebraska. This Task Force will review the likely nature and evolution of potential future strategic challenges to the U.S., advanced technologies for nuclear weapons systems and non-nuclear strategic weapons systems, and advanced C4ISR technology applications for strategic contingencies.

The mission of the Defense Science Board is to advise the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology & Logistics on scientific and technical matters as they affect the perceived needs of the Department of Defense. At this meeting, the Defense Science Board Task Force will consider the extent to which technologies and systems currently being developed and applied for regional contingencies are relevant and applicable to future strategic contingencies; take into account affordability and arms control constraints; look at possible further future ballistic missile defense technology to the extent that ballistic missile defense relates to the overall future strategic posture; and consider strategies for using the national strategic technology base to deal with, or hedge against, the uncertainties and ambiguities inherent in the nature and timing of emergence of possible strategic threats, including possible dissuasion of such threats; and, consider the capability of the technology and industrial base to respond in time to long-term strategic warning in various forms, including the adequacy and responsiveness of DoD's science and technology programs.

In accordance with Section 10(d) of the Federal Advisory Committee Act, Public Law 92–463, as amended (5 U.S.C. App. II, (1994)), it has been determined that this Defense Science Board meeting concerns matters listed in 5 U.S.C. 552b(c)(1) (1994), and that accordingly these meetings will be closed to the public.

Dated: October 19, 2000.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 00–27320 Filed 10–24–00; 8:45 am]

BILLING CODE 5001–10–M

DEPARTMENT OF EDUCATION

Notice of Proposed Information Collection Requests

AGENCY: Department of Education.

SUMMARY: The Leader, Regulatory Information Management Group, Office of the Chief Information Officer, invites comments on the proposed information collection requests as required by the Paperwork Reduction Act of 1995.

DATES: Interested persons are invited to submit comments on or before December 26, 2000.

SUPPLEMENTARY INFORMATION: Section 3506 of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35) requires that the Office of Management and Budget (OMB) provide interested Federal agencies and the public an early opportunity to comment on information collection requests. OMB may amend or waive the requirement for public consultation to the extent that public participation in the approval process would defeat the purpose of the information collection, violate State or Federal law, or substantially interfere with any agency's ability to perform its statutory obligations. The Leader, Regulatory Information Management Group, Office of the Chief Information Officer, publishes that notice containing proposed information collection requests prior to submission of these requests to OMB. Each proposed information collection, grouped by office, contains the following: (1) Type of review requested, *e.g.* new, revision, extension, existing or reinstatement; (2) Title; (3) Summary of the collection; (4) Description of the need for, and proposed use of, the information; (5) Respondents and frequency of collection; and (6) Reporting and/or Recordkeeping burden. OMB invites public comment. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology.

Dated: October 19, 2000.

John Tressler,

Leader, Regulatory Information Management, Office of the Chief Information Officer.

Office of the Chief Financial Officer

Type of Review: Extension.

Title: Streamlined Clearance Process for Discretionary Grant Information Collections.

Frequency: Annually.

Affected Public: Individuals or household; Businesses or other for-profit; Not-for-profit institutions; State, Local, or Tribal Gov't, SEAs or LEAs.

Reporting and Recordkeeping Hour Burden:

Responses: 1.

Burden Hours: 1.

Abstract: The information collection plan provides the U.S. Department of Education with the option of submitting its discretionary grant information collections through a streamlined Paperwork Reduction Act clearance process. This streamlined clearance process will begin when the Department submits the information collection to the OMB and, at the same time, publishes a 30-day public comment period notice in the **Federal Register**. OMB will then have 60 days after the start of the public comment period to reach a decision on the information collection.

Requests for copies of the proposed information collection request may be accessed from http://edicsweb.ed.gov, or should be addressed to Vivian Reese, Department of Education, 400 Maryland Avenue, SW, Room 4050, Regional Office Building 3, Washington, D.C. 20202–4651. Requests may also be electronically mailed to the internet address OCIO_IMG_Issues@ed.gov or faxed to 202–708–9346. Please specify the complete title of the information collection when making your request.

Comments regarding burden and/or the collection activity requirements should be directed to Jacqueline Montague at (202)708–5359 or via her internet address Jackie_Montague@ed.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339.

[FR Doc. 00–27360 Filed 10–24–00; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF EDUCATION

Submission for OMB Review; Comment Request

AGENCY: Department of Education.

SUMMARY: The Leader, Regulatory Information Management Group, Office of the Chief Information Officer invites comments on the submission for OMB review as required by the Paperwork Reduction Act of 1995.

DATES: Interested persons are invited to submit comments on or before November 24, 2000.

ADDRESSES: Written comments should be addressed to the Office of Information and Regulatory Affairs, Attention: Lauren Wittenberg, Acting Desk Officer, Department of Education, Office of Management and Budget, 725 17th Street, NW., Room 10235, New Executive Office Building, Washington, DC 20503 or should be electronically mailed to the internet address Lauren—Wittenberg@omb.eop.gov.

SUPPLEMENTARY INFORMATION: Section 3506 of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35) requires that the Office of Management and Budget (OMB) provide interested Federal agencies and the public an early opportunity to comment on information collection requests. OMB may amend or waive the requirement for public consultation to the extent that public participation in the approval process would defeat the purpose of the information collection, violate State or Federal law, or substantially interfere with any agency's ability to perform its statutory obligations. The Leader, Regulatory Information Management Group, Office of the Chief Information

Officer, publishes that notice containing proposed information collection requests prior to submission of these requests to OMB. Each proposed information collection, grouped by office, contains the following: (1) Type of review requested, *e.g.* new, revision, extension, existing or reinstatement; (2) Title; (3) Summary of the collection; (4) Description of the need for, and proposed use of, the information; (5) Respondents and frequency of collection; and (6) Reporting and/or Recordkeeping burden. OMB invites public comment.

Dated: October 18, 2000.

John Tressler,

Leader, Regulatory Information Management, Office of the Chief Information Officer.

Office of Special Education and Rehabilitative Services

Type of Review: Reinstatement.

Title: Application for Free Loan Service of Captioned Media Program (English and Spanish Version) and Media Response Card (English and Spanish Version).

Frequency: On Occasion.

Affected Public: Businesses or other for-profit; Individuals or household; Not-for-profit institutions; State, Local, or Tribal Gov't, SEAs or LEAs.

Reporting and Recordkeeping Hour Burden: Responses: 90,000 Burden Hours: 40,667.

Abstract: This package provides an application form for prospective users of captioned media and response cards to evaluate satisfaction with captioned media.

Requests for copies of the proposed information collection request may be accessed from *http://edicsweb.ed.gov*, or should be addressed to Vivian Reese, Department of Education, 400 Maryland Avenue, SW, Room 4050, Regional Office Building 3, Washington, D.C. 20202–4651. Requests may also be electronically mailed to the internet address OCIO_IMG_Issues@ed.gov or faxed to 202–708–9346. Please specify the complete title of the information collection when making your request.

Comments regarding burden and/or the collection activity requirements should be directed to Sheila Carey at (202) 708–6287 or via her internet address Sheila_Carey@ed.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339.

[FR Doc. 00–27359 Filed 10–24–00; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

American Statistical Association Committee on Energy Statistics

AGENCY: Department of Energy.

ACTION: Notice of renewal.

SUMMARY: Pursuant to the Federal Advisory Committee Act (Pub. L. 92–463), I hereby certify that the renewal of the charter of the American Statistical Association Committee on Energy Statistics is in the public interest in connection with the performance of duties imposed on the Department of Energy by law. This determination follows consultation with the Committee Management Secretariat of the General Services Administration, pursuant to section 101–6.1029, title 41, Code of Federal Regulations.

FOR FURTHER INFORMATION CONTACT: Ms. Rachel M. Samuel at (202) 586–3279.

SUPPLEMENTARY INFORMATION: The purpose of the Committee is to provide advice on a continuing basis to the Administrator of the Energy Information Administration (EIA), including:

1. Periodic reviews of the elements of EIA information collection and analysis programs and the provision of recommendations;
2. Advice on priorities of technical and methodological issues in the planning, operation, and review of EIA statistical programs;
3. Advice on matters concerning improved energy modeling and forecasting tools, particularly regarding their functioning, relevancy, and results.

Issued in Washington, DC, on October 19, 2000.

James N. Solit,

Advisory Committee Management Officer.

[FR Doc. 00–27388 Filed 10–24–00; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board, Fernald

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: This notice announces a meeting of the Environmental Management Site-Specific Advisory Board (EM SSAB), Fernald. The Federal Advisory Committee Act (Pub. L. No. 92–463, 86 Stat. 770) requires that public notice of these meetings be announced in the **Federal Register**.

DATES: Saturday, November 18, 2000, 8:30 a.m.–12:30 p.m.

ADDRESS: Fernald Environmental Management Project, Site Services Building Conference Room, 7400 Willey Road, Hamilton, OH 45219.

FOR FURTHER INFORMATION CONTACT: Victoria Spriggs, Phoenix Environmental, 6186 Old Franconia Road, Alexandria, VA 22310, at (703) 971–0058 or e-mail; *vspriggs@theperspectivesgroup.com.*

SUPPLEMENTARY INFORMATION:

Purpose of the Board

The purpose of the Board is to make recommendations to DOE in the areas of environmental restoration, waste management, and related activities.

Tentative Agenda

8:30 a.m.: Call to Order
8:30–8:45 a.m.: Chair's Remarks and Announcements
8:45–9:30 a.m.: Report on SSAB Stewardship Workshop
9:30–10:00 a.m.: Update on Contract and Budget Issues
10:00–10:15 a.m.: Break
10:15–11:00 a.m.: Silos Update and Discussion
11:00–11:45 a.m.: Waste Pits Remedial Action Project (WPRAP) Update and Discussion
11:45–12:15 p.m.: New Member Recruitment
12:15–12:30 p.m.: Public Comment Session
12:30 p.m.: Adjourn and Lunch

Public Participation

The meeting is open to the public. Written statements may be filed with the Board chair either before or after the meeting. Individuals who wish to make oral statements pertaining to agenda items should contact the Board chair at the address or telephone number listed below. Requests must be received five days prior to the meeting and reasonable provision will be made to include the presentation in the agenda. The Deputy Designated Federal Officer, Gary Stegner, Public Affairs Office, Ohio Field Office, U.S. Department of Energy, is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Each individual wishing to make public comment will be provided a maximum of five minutes to present their comments.

Minutes

The minutes of this meeting will be available for public review and copying at the Freedom of Information Public Reading Room, 1E–190, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC, 20585 between 9 a.m. and 4 p.m., Monday–Friday, except Federal holidays. Minutes will also be available by writing to the Fernald

Citizens Advisory Board, c/o Phoenix Environmental Corporation, MS–76, Post Office Box 538704, Cincinnati, OH 43253–8704, or by calling the Advisory Board at (513) 648–6478.

Issued at Washington, DC on October 19, 2000.

Rachel Samuel,

Deputy Advisory Committee Management Officer.

[FR Doc. 00–27387 Filed 10–24–00; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Secretary of Energy Advisory Board; Notice of Open Teleconference Meeting

AGENCY: Department of Energy.

SUMMARY: This notice announces three open teleconference meetings of the Secretary of Energy Advisory Board's Panel on Emerging Technological Alternatives to Incineration. The Federal Advisory Committee Act (Pub. L. 92–463, 86 Stat. 770), requires that agencies publish these notices in the **Federal Register** to allow for public participation. Name: Secretary of Energy Advisory Board—Panel on Emerging Technological Alternatives to Incineration.

DATES: November 6, 11:30 a.m.–2 p.m. EST; November 20, 4 p.m.–6 p.m. EST; November 27, 4 p.m.–6 p.m. EST.

Call-In-Information: Participants may call the Office of the Secretary of Energy Advisory Board at (202) 586–7092 to register for a teleconference line and receive a call-in number. Public participation is welcomed. However, teleconference lines are limited, and are assigned on a first-come basis.

FOR FURTHER INFORMATION CONTACT: Mary Louise Wagner, Executive Director, or Francesca McCann, Staff Director, Office of the Secretary of Energy Advisory Board (AB–1), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–7092 or (202) 586–6279 (fax).

SUPPLEMENTARY INFORMATION: The purpose of the Secretary of Energy Advisory Board's Panel on Emerging Technological Alternatives to Incineration is to provide independent external advice and recommendations to the Secretary of Energy Advisory Board on emerging technological alternatives to incineration for the treatment of mixed waste which the Department of Energy should pursue. The Panel will focus on the evaluation of emerging non-incineration technologies for the treatment of low-level, alpha low-level and transuranic wastes containing polychlorinated biphenyls (PCBs) and other hazardous constituents. Waste categories to be addressed include inorganic homogeneous solids, organic homogeneous solids, and soils. The Panel will also evaluate whether the emerging non-incineration technologies could be implemented in a manner that would allow the Department of Energy to comply with all legal requirements, including those contained in the Settlement Agreement and Consent Order signed by the State of Idaho, Department of Energy, and the U.S. Navy in October 1995. Tentative Agenda:

Each open teleconference meeting will include panel discussion and allow for a public comment period during the last 30 minutes of the call. Members of the public wishing to comment will have an opportunity to address the Panel during the scheduled public comment periods:

November 6, 1:30–2 p.m. EST
November 20, 5:30–6 p.m. EST
November 27, 5:30–6 p.m. EST

Public Participation

In keeping with procedures, members of the public are welcome to listen to the business of the Panel on Emerging Technological Alternatives to Incineration and submit written comments or comment during the scheduled public comment periods. Members of the public will be heard in the order in which they sign up at the beginning of the meeting. The Panel will make every effort to hear the views of all interested parties. The Chairman of the Panel is empowered to conduct the calls in a fashion that will, in the Chairman's judgment, facilitate the orderly conduct of business. You may submit written comments to Mary Louise Wagner, Executive Director, Secretary of Energy Advisory Board, AB–1, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585. The notice for the November 6, 2000, teleconference is being published less than 15 days before the date of the meeting due to the late resolution of programmatic issues.

Minutes

A copy of the minutes and a transcript of each of the open teleconference meetings will be made available for public review and copying approximately 30 days following the meeting at the Freedom of Information Public Reading Room, 1E–190 Forrestal Building, 1000 Independence Avenue, SW., Washington, DC, between 9 a.m. and 4 p.m., Monday through Friday except Federal holidays.

Issued at Washington, DC, on October 20, 2000.

Rachel M. Samuel,

Deputy Advisory Committee Management Officer.

[FR Doc. 00–27389 Filed 10–24–00; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

[FE Docket No. 00–61–NG, 00–62–NG, 00–67–NG, 00–60–NG, 95–104–NG, 97–48–NG, 97–36–NG, 97–03–NG, 96–52–NG, 97–37–NG]

Office of Fossil Energy; Orders Granting and Transferring Authority to Import and Export Natural Gas; Aquila Energy Marketing Corporation et al.

AGENCY: Office of Fossil Energy, DOE.

ACTION: Notice of orders.

SUMMARY: The Office of Fossil Energy (FE) of the Department of Energy gives notice that during September 2000, it issued Orders granting and transferring authority to import and export natural gas. These Orders are summarized in the attached appendix and may be found on the FE web site at http://www.fe.doe.gov, or on the electronic bulletin board at (202) 586–7853. They are also available for inspection and copying in the Office of Natural Gas & Petroleum Import & Export Activities, Docket Room 3E–033, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–9478. The docket room is open between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

Issued in Washington, DC, on October 19, 2000.

John W. Glynn,

Manager, Natural Gas Regulation, Office of Natural Gas & Petroleum, Import & Export Activities, Office of Fossil Energy.

Appendix—Orders Granting and Transferring Import/Export Authorizations

Order No.	Date issued	Importer/exporter FE Docket No.	Import volume	Export volume	Comments
1623	9/01/00	Aquila Energy Marketing Corporation, 00–61–NG.	200 Bcf	....	Import from Canada beginning on September 1, 2000, and extending through August 31, 2002.
1624	9/13/00	BP Canada Energy Marketing Corp., (Formerly known as Amoco Canada Marketing Corp.), 00–62–NG.	500 Bcf		Import and export a combined total from and to Canada, beginning on September 24, 2000, and extending through September 23, 2002.
1625	9/26/00	CoEnergy Trading Company, 00–67–NG	150 Bcf	....	Import from Canada, beginning on September 30, 2000, and extending through September 29, 2002.
1626	9/29/00	Domcan Boundary Corp., 00–60–NG	25 Bcf	....	Import from Canada, beginning on October 1, 2000, and extending through September 30, 2002.
1128–A ..	9/29/00	Westcoast Gas services Delaware (America) Inc. (Successor to Coastal Gas Marketing Company and Engage Energy US, L.P.), 95–104–NG.	....	....	Transfer of long-term import authority.
1332–A ..	9/29/00	Westcoast Gas services Delaware (America) Inc. (Successor to Engage Energy US, L.P.), 97–48–NG.	....	....	Do.
1275–A ..	9/29/00	Westcoast Gas services Delaware (America) Inc. (Successor to Coastal Gas Marketing Company and Engage Energy US, L.P.), 97–36–NG.	....	....	Do.
1253–A ..	9/29/00	Westcoast Gas services Delaware (America) Inc. (Successor to Coastal Gas Marketing Company and Engage Energy US, L.P.), 97–03–NG.	....	....	Do.
1202–A ..	9/29/00	Westcoast Gas services Delaware (America) Inc. (Successor to Coastal Gas Marketing Company and Engage Energy US, L.P.), 96–52–NG.	....	....	Do.
1282–A ..	9/29/00	Westcoast Gas services Delaware (America) Inc. (Successor to Coastal Gas Marketing Company and Engage Energy US, L.P.), 97–37–NG.	....	....	Do.

[FR Doc. 00–27391 Filed 10–24–00; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

[Docket Nos. FE C&E 00–24, C&E 00–25, C&E 00–26, C&E 00–27 and C&E 00–28; Certification Notice—191]

Office of Fossil Energy; Notice of Filings of Coal Capability of South Carolina Electric & Gas Co., Northern States Power Co., Cedar Bluff Power Project, L.P. and MC Energy Partners, L.P. Powerplant and Industrial Fuel Use Act

AGENCY: Office of Fossil Energy, Department of Energy.

ACTION: Notice of filing.

SUMMARY: South Carolina Electric & Gas Co., Northern States Power Co., Cedar Bluff Power Project, L.P., and MC Energy Partners, L.P. submitted coal capability self-certifications pursuant to section 201 of the Powerplant and Industrial Fuel Use Act of 1978, as amended.

ADDRESSES: Copies of self-certification filings are available for public inspection, upon request, in the Office of Coal & Power Im/Ex, Fossil Energy, Room 4G–039, FE–27, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585.

FOR FURTHER INFORMATION CONTACT: Ellen Russell at (202) 586–9624.

SUPPLEMENTARY INFORMATION: Title II of the Powerplant and Industrial Fuel Use Act of 1978 (FUA), as amended (42 U.S.C. 8301 *et seq.*), provides that no new baseload electric powerplant may be constructed or operated without the capability to use coal or another alternate fuel as a primary energy source. In order to meet the requirement of coal capability, the owner or operator of such facilities proposing to use natural gas or petroleum as its primary energy source shall certify, pursuant to FUA section 201(d), to the Secretary of Energy prior to construction, or prior to operation as a base load powerplant, that such powerplant has the capability to use coal or another alternate fuel. Such certification establishes compliance with section 201(a) as of the date filed with the Department of Energy. The Secretary is required to publish a notice in the **Federal Register** that a certification has been filed. The following owners/operators of the proposed new baseload powerplants have filed a self-certification in acccordance with section 201(d).

Owner: South Carolina Electric & Gas Company (C&E 00–24).

Operator: South Carolina Electric & Gas Company.

Location: Beech Island, Aiken County, SC.

Plant Configuration: Combined-cycle.

Capacity: 490 MW.

Fuel: Natural gas.

Purchasing Entities: South Carolina Electric & Gas.

In-Service Date: June 1, 2002.

Owner: Northern States Power Company (C&E 00–25).

Operator: Northern States Power Company.

Location: Burnsville, MN.

Plant Configuration: Combined-cycle.

Capacity: 313 MW.

Fuel: Natural gas.

Purchasing Entities: Northern States Power Company.

In-Service Date: May 1, 2002.

Owner: Cedar Bluff Power Project, L.P. (C&E 00–26).

Operator: Cedar Bluff Power Project, L.P.

Location: Liberty County, TX.

Plant Configuration: Combined-cycle.

Capacity: 685 MW.

Fuel: Natural gas.

Purchasing Entities: Not yet determined.

In-Service Date: January 1, 2003.

Owner: MC Energy Partners, L.P. (C&E 00–27).

Operator: MC Energy Partners, L.P.

Location: Montgomery County, TX.

Plant Configuration: Combined-cycle.

Capacity: 685 MW.

Fuel: Natural gas.

Purchasing Entities: Not yet determined.

In-Service Date: January 1, 2003.

Issued in Washington, DC, October 17, 2000.

Anthony J. Como,

Deputy Director, Electric Power Regulation, Office of Coal & Power Im/Ex, Office of Coal & Power Systems, Office of Fossil Energy.

[FR Doc. 00–27390 Filed 10–24–00; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP01–46–000]

Carnegie Interstate Pipeline Company; Notice of Request for Exemption

October 19, 2000.

Take notice that on October 13, 2000, Carnegie Interstate Pipeline Company (Carnegie) in compliance with the Commission's September 28, 2000 order in Docket No. RM96–1–016, and pursuant to Rule 212 of the Commission's Rules of Practice and Procedure, 18 CFR 385.212, tendered for filing their requests for waiver of section 284.12(c)(2)(ii) of the Commission's regulations, which requires pipelines to implement imbalance netting and trading on their systems.

Carnegie states that its shippers do not incur imbalances netting trading to avoid cash-out charges because Carnegie does not have a cash-out mechanism.

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426, in accordance with Sections 385.214 or 385.211 of the Commission's Rules and Regulations. All such motions or protests must be filed on or before October 26, 2000. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

David P. Boergers,

Secretary.

[FR Doc. 00–27342 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP01–54–000]

El Paso Natural Gas Company; Notice of Transportation Service Agreement

October 19, 2000.

Take notice that on October 13, 2000, El Paso Natural Gas Company (El Paso) tendered for filing an amended and restated firm Transportation Service Agreement (TSA) between El Paso and MGI Supply, Ltd. (MGI).

El Paso states that it is submitting the TSA for Commission approval since the TSA revises the rate provisions of an executed service agreement on file with the Commission. The TSA is proposed to become effective on October 8, 2000.

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Sections 385.214 or 385.211 of the Commission's Rules and Regulations. All such motions or protests must be filed on or before October 26, 2000. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

David P. Boergers,

Secretary.

[FR Doc. 00–27344 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP01–53–000]

Great Lakes Gas Transport, LLC; Notice of Proposed Changes in FERC Gas Tariff

October 19, 2000.

Take notice that on October 16, 2000, Great Lakes Gas Transport, LLC (GT), formerly Gas Transport, Inc., tendered for filing as part of its FERC Gas Tariff, Second Revised Volume No. 1, Third Revised Sheet No. 143, with a proposed effective date of November 1, 2000.

GT states that the purpose of the instant filing is to comply with Order No. 587–L issued June 30, 2000 in Docket No. RM96–1–014, which permits shippers to offset imbalances on different contracts held by the shipper and to trade imbalances.

GT states that copies of this filing were served upon its customers and interested state commissions.

Any person desiring to be heard or to protect said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Sections 385.214 or 385.211 of the Commission's Rules and Regulations. All such motions or protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

David P. Boergers,

Secretary.

[FR Doc. 00–27343 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Notice of Motion for Declaratory Order, and Soliciting Comments, Motions To Intervene, and Protests

October 19, 2000.

a. *Type of Filing:* Motion for Declaratory Order to Find that the Idaho Transmission Line Project is no longer jurisdictional and no longer requires licensing.

b. *Project No.:* 2168–003.

c. *Date Filed:* October 2, 2000.

d. *Applicant:* Lower Valley Energy.

e. *Name of Project:* Idaho Transmission Line Project.

f. *Location:* The Project is located in Bonneville County, Idaho, and Lincoln County, Wyoming. The Project occupies lands of the United States within the Targhee National Forest.

g. *Filed Pursuant to:* Federal Energy Regulatory Commission Regulation, 18 CFR 385.207.

h. *Applicant Contact:* Steve Owens, System Engineer, Lower Valley Energy, 236 N. Washington, P.O. Box 188, Afton, WY 83110, (307) 885–3175.

i. *FERC Contact:* Tom Dean, (202) 219–2778, or thomas.dean@ferc.fed.us.

j. *Deadline for filing comments, motions to intervene or protests:* 30 days from the issuance date of this notice.

All documents (original and eight copies) should be filed with: David Boergers, Secretary, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20526.

The Commission's Rules of Practice and Procedure require all intervenors filing documents with the Commission to serve a copy of that document on each person whose name appears on the official service list for the project. Further, if an intervenor files comments or documents with the Commission relating to the merits of an issue that may affect the responsibilities of a particular resource agency, they must also serve a copy of the document on that resource agency.

k. *Description of Project:* The existing project consists of a 16-mile-long, 115 kV transmission line extending from the Bureau of Reclamation's Palisades Project in Idaho, to Clingers Corners in Wyoming. Lower Valley Energy requests that the Commission find the Idaho Transmission Line Project no longer jurisdictional and no longer requires licensing.

l. *Location of the Filing:* A copy of the filing is available for inspection and reproduction at the Commission's Public Reference Room, located at 888 First Street, NE., Room 2A, Washington, DC 20426, or by calling (202) 208–1371. This filing may be viewed on http://www.ferc.fed.us/online/rims.htm [call (202) 208–2222 for assistance]. A copy is also available for inspection and reproduction at the address in item h above.

m. Individuals desiring to be included on the Commission's mailing list should so indicate by writing to the Secretary of the Commission.

Comments, Protests, or Motions to Intervene—Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210, .211, .214. In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

Filing and Service of Responsive Documents—Any filings must bear in all capital letters the title ''COMMENTS'', ''PROTEST'', OR ''MOTION TO INTERVENE'', as applicable, and the Project Number of the particular application to which the filing refers. Any of the above-named documents must be filed by providing the original and the number of copies provided by the Commission's regulations to: The Secretary, Federal Energy Regulatory Commission, 888 First Street, NW., Washington, DC 20426. A copy of any motion to intervene must also be served upon each representative of the Applicant specified in the particular application.

Agency Comments—Federal, state, and local agencies are invited to file comments on the described application. A copy of the application may be obtained by agencies directly from the Applicant. If an agency does not file comments within the time specified for filing comments, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

Beginning November 1, 2000, comments and protests may be filed electronically via the internet in lieu of paper. See, 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site at http://www.ferc.fed.us/efi/doorbell.htm.

David P. Boergers,

Secretary.

[FR Doc. 00–27340 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP00–226–002]

Mississippi Canyon Gas Pipeline, LLC; Notice of Compliance Filing

October 18, 2000.

Take notice that on October 13, 2000, Mississippi Canyon Gas Pipeline, LLC (MCGP) tendered for filing the following tariff sheets with a proposed effective date of October 1, 2000:

Substitute Second Revised Sheet No. 27
Substitute Original Sheet No. 27A
Original Sheet No. 27B

MCGP states that the purpose of this filing is to comply with an Order on Supplemental Filings issued on September 29, 2000, by the Commission in Docket No. RP00–226–001.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426, in accordance with section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

David P. Boergers,

Secretary.

[FR Doc. 00–27336 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket Nos. EL00–95–000 and EL00–98–000]

Order Announcing Expedited Procedures for Addressing California Market Issues

October 19, 2000.

Before Commissioners: James J. Hoecker, Chairman; William L. Massey, Linda Breathitt, and Curt Hebert, Jr.

San Diego Gas & Electric Company, Complainant, v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, Respondents; Investigation of Practices of the California Independent System Operator and the California Power Exchange.

On August 23, 2000, in the consolidated dockets listed above, the Commission issued an order initiating hearing proceedings under section 206 of the Federal Power Act [1] to address matters affecting bulk power markets and wholesale energy prices in California.[2] The Commission held the hearing in abeyance, however, pending the results of a separate staff fact-finding investigation, ordered by the Commission on July 26, 2000, of the conditions in electric bulk power markets (including volatile price fluctuations) in various regions of the country.[3] In the August 23 Order, the Commission directed staff to focus its fact-finding investigation on California and the Western region as soon as possible; the Commission stated that it intended to issue a further order in the captioned dockets after it reviews the outcome of the staff investigation related to California markets to take into account the staff investigation findings, as appropriate, and to address or further refine the issues it was setting for hearing, as appropriate.

Because of the need for expeditious action to address the serious issues affecting California electric power markets and California consumers, and to provide guidance to persons whose interests may be affected by decisions in these dockets, the Commission is taking the unusual step of announcing in advance the procedures it expects to follow over the coming weeks to move forward in these proceedings:

- On November 1, 2000, the Commission plans to hold a special meeting for purposes of considering the issuance of a proposed order in the captioned dockets that proposes specific remedies to address the issues set for hearing in the August 23 Order and that directs any further procedural steps deemed necessary or appropriate. The Commission also will place in the public record of these dockets the staff investigation report on California and the Western region.
- The Commission will give all interested persons approximately three weeks to intervene [4] and to comment on the Commission's proposed remedies or on other remedies that they believe should be adopted, and to provide any additional factual information or arguments to supplement the record. Comments filed may also address any facts or issues discussed in the staff investigation report that is placed in the public record of the captioned dockets.
- On November 9, 2000 (during the comment period on the proposed remedies), the Commission expects to hold a public conference to discuss proposed remedies. A transcript of the conference will be placed in the public record of the captioned dockets. A separate order will be issued to specify time of the conference and the manner for seeking participation in the conference.
- The transcript of the Commission's September 12, 2000 public conference conducted in San Diego, California, in Docket No. EL00–107–000, and any written comments filed in that docket, will be placed in the public record of the captioned proceedings.
- Based on the record developed in the captioned dockets, including the staff investigation report and all comments and additional facts and information placed in the record, the Commission anticipates issuing, by the end of this calendar year, an order adopting and directing remedies (to the extent those remedies are within our jurisdiction) to promptly address to the extent possible the identified problems adversely affecting competitive power markets in California and, if necessary, ordering any further proceedings to develop remedies to other identified problems.

The Commission reminds all interested persons that this is a contested, on-the-record proceeding, and that the Commission's regulations concerning ex parte communications apply. Generally, this means that no person may make any off-the-record communication to a Commissioner or to any other Commission decisional employee in this proceeding. An off-the-record communication means any communication relevant to the merits of the proceeding that, if written, is not filed with the Secretary and served on the parties or, if oral, is made without reasonable prior notice to the parties in the proceeding and without the opportunity for such parties to be present when the communication is made. *See* 18 CFR 385.2201 (2000).

[1] 16 U.S.C. 824e (1994).

[2] San Diego Gas & Electric Company, *et al.*, 92 FERC ¶ 61,172 (2000), *reh'g pending* (August 23 Order).

[3] Order Directing Staff Investigation, 92 FERC ¶ 61,160 (2000). The order directed staff to complete the investigation and report the findings to the Commission by November 1, 2000.

[4] Parties that intervened in the SDG&E complaint, Docket No. EL00–95–000, are considered to be parties in the consolidated hearing proceeding. *See* August 23 Order at 61,608.

By the Commission. Commissioner Hébert concurs with a statement attached.

David P. Boergers,

Secretary.

Hébert, Commissioner concurring:

I support this order because it gives the people of California an indication of the timetable for FERC action following our staff's investigation of this past summer's prices. In a democratic society, government owes citizens the duty to account for its actions and the means for them to affect policy. I would go a step further, however. Rather than wait for November 1 to release the findings of our staff's investigation, I urge the Chairman to release the completed report now. Open government requires it; fairness does as well. The people of California should have as much time as possible to digest our staff's findings and consider the options presented.

Justice Brandeis often remarked ''Sunshine is the best disinfectant.'' Let the sun shine on our staff's report. It can only help heal the raw emotions rampant in the State of California. I hope that the Commission will proceed in the right path from now on. I, therefore, concur.

Curt L. Hébert, Jr.,

Commissioner.

[FR Doc. 00–27386 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. GP01–1–000]

Shell Deepwater Development Inc., et al.; Notice of Petition for Declaratory Order

October 19, 2000.

Take notice that on October 16, 2000, in Docket No. GP01–1–000, Shell Deepwater Development Inc., Shell Deepwater Production Inc., and Shell Offshore Inc. (collectively: Shell Producers) filed a petition for a Declaratory Order from the Commission finding that the services rendered through 15 offshore production complexes (see list below) are exempt from the reporting requirements of Order Nos. 639 and 639–A,[1] for the reasons set forth in the petition. The subject petition is on file with the Commission and open to public inspection.

1. The West Delta 143 Production Complex
2. The Bullwinkle Production Complex
3. The Boxer Production Complex
4. The Enchilada (Garden Banks 128) Production Complex
5. The South Timbalier 300 Production Complex
6. The Bud Production Complex
7. The Ram-Powell Production Complex
8. The Spirit Production Complex
9. The Eugene Island 331 Production Complex
10. The Mississippi Canyon 311 Production Complex
11. The Eugene Island 158 Production Complex
12. The High Island 154 Production Complex
13. The High Island 179 Production Complex
14. The Brazos A–19 Production Complex
15. The Main Pass 290 Production Complex

The Shell Producers contend that each of the above-referenced production complexes should qualify under Order No. 639's feeder-line exemption, and that certain of these facilities should qualify under either the single-shipper or shipper-owner exemption in Order No. 639. The Shell Producers also contend that Order No. 639's single-shipper and shipper-owner exemptions require clarification, and request that the Commission find that producer participation in the Minerals Management Service's royalty-in-kind (RIK) program will not cause otherwise applicable Order No. 639 exemptions to terminate.

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with sections 385.214 or 385.211 of the Commission's Rules and Regulations. All such motions or protests must be filed on or before November 15, 2000. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance). Beginning November 1, 2000, comments and protests may be filed electronically via the internet in lieu of paper. See, 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site at http://www.ferc.fed.us/efi/doorbell.htm.

David P. Boergers,

Secretary.

[FR Doc. 00–27338 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

[1] Regulations under the Outer Continental Shelf Lands Act Governing the Movement of Natural Gas on Facilities on the Outer Continental Shelf, Order No. 639, 65 FR 20354 (Apr. 17, 2000), FERC Stats. & Regs. 31,514 (2000), 91 FERC 61,019 (2000), order on reh'g, Order No. 639–A, 92 FERC 61,077 (2000).

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP01–45–000]

Total Peaking Services, L.L.C.; Notice of Request for Exemption

October 19, 2000.

Take notice that on October 13, 2000, Total Peaking Services, L.L.C. (Total Peaking) in compliance with the Commission's September 28, 2000 order in Docket No. RM96–1–016, and pursuant to Rule 212 of the Commission's Rules of Practice and Procedure, 18 CFR 385.212, tendered for filing a requests for waiver of section 284.12(c)(2)(ii) of the Commission's regulations, which requires pipelines to implement imbalance netting and trading on their systems.

Total Peaking states that its shippers do not incur imbalances netting trading to avoid cash-out charges because Total Peaking does not have a cash-out mechanism.

Total Peaking states that copies of the filing have been served upon each person designated on the official service list compiled by the Secretary in Docket No. RP00–460–000, as well as any affected state commissions.

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washingotn, DC 20426, in accordance with Sections 385.214 or 385.211 of the Commission's Rules and Regulations. All such motions or protests must be filed on or before October 26, 2000. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

David P. Boergers,

Secretary.

[FR Doc. 00–27341 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket Nos. RP01–55–000 and RP01–37–000 (Not Consolidated)]

WestGas InterState, Inc., Equitrans, L.P.; Notice of Request for Exemption

October 19, 2000.

Take notice that on October 10, 2000, WestGas InterState, Inc. (WGI), and Equitrans, L.P. (Equitrans) tendered for filing separately their petition for exemption from the imbalance trading requirements of 18 CFR 284.12(c)(2)(ii), of the Commission regulations, which requires pipelines to implement imbalance netting and trading on their systems.

WGI and Equitrans states that copies of this filing have been served on their jurisdictional customers and public bodies.

Any person desiring to be heard or to protest said filings should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Sections 385.214 or 385.211 of the Commission's Rules and Regulations. All such motions or protests must be filed on or before October 26, 2000. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

David P. Boergers,

Secretary.

[FR Doc. 00–27345 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. CP01–10–000]

Williams Gas Pipelines Central, Inc.; Notice of Application

October 19, 2000.

Take notice that on October 12, 2000, Williams Gas Pipelines Central, Inc. (Williams), 3800 Frederica Street, Owensboro, Kentucky 42301, filed in Docket No. CP01–10–000 an application pursuant to sections 7(c) and 7(b) of the Natural Gas Act for permission and approval for Williams to construct and operate certain replacement natural gas facilities and to abandon the facilities being replaced due to the age and condition of the facilities, located in Anderson County and Franklin County, Kansas, all as more fully set forth in the application which is on file with the Commission and open to public inspection. This filing may be viewed on the web at http://www.ferc.fed.us/online/rims.htm (call 202–208–2222 for assistance).

Williams proposes to abandon by removal seven 1,000 horsepower (HP) Cooper Type 22 horizontal compressor units and auxiliary equipment supporting these compressors including station piping at its Ottawa Compressor Station, located in Franklin County, Kansas. Williams also proposes to construct and operate one 6,107 HP (ISO Rated) Solar Centaur 50 turbine/compressor package and supporting appurtenant equipment at its Welda Compressor Station located in Anderson County, Kansas, in replacement of the units proposed to be abandoned at its Ottawa station.

Williams states that the seven horizontal compressor units proposed for replacement were originally constructed in the late 1920's and early 1930's and were placed in service in the 1940's pursuant to Williams' (formerly Cities Service Gas Company) ''grandfather'' certificate in Docket No. G–298 (4 FPC 471). Williams declares that it has experienced rising maintenance costs associated with the seven horizontal compressors at the Ottawa station and it has become increasingly difficult to obtain replacement parts for these compressor units due to their age.

Williams states that during the withdrawal season, the Ottawa and Welda compressor stations work in tandem to pull gas from the North Welda, South Welda, and Colony storage fields (Welda storage complex). Williams declares that gas withdrawals from the Welda storage complex feed into a common intake at the Welda Compressor Station where the gas is compressed and discharged into Williams' Welda-Ottawa 20-inch and 26-inch pipeline systems and recompressed at the Ottawa station for transport to markets north and east of Ottawa.

Williams asserts that the certificated MAOP of the Welda-Ottawa 20-inch pipeline is 690 psig. Williams states that during periods of peak withdrawal, they have been unable to discharge from the Welda station into the Ottawa-Welda 20-inch line at the certificated MAOP for transport of gas toward the Ottawa station.

Williams asserts that the efficiency and reliability of the Welda and Ottawa stations is critical for Williams to continue to meet customer obligations. Williams declares that the granting of the proposal will gain operating efficiency and reliability along this segment of the Williams pipeline system by reducing maintenance costs of vintage compressors and by restoring operating pressure capabilities at their designed and approved pressure capabilities.

Williams asserts that the estimated cost for the proposed turbine and auxiliary support facilities is $7,105,795 and the estimated cost associated with the proposed abandonment is $179,305. Williams states that the proposed age and condition replacement and the benefits it provides to existing customers in overall reliability, flexibility, and efficiency to the system, qualifies for rolled-in rate treatment under the Commission's *Statement of Policy,* 88 FERC Paragraph 61,227 (1999) as interpreted by the Commission in *Texas Gas Transmission Corporation,* 90 FERC Paragraph 62,190 (2000). Therefore, Williams requests all project costs should be permitted rolled-in treatment in William's next rate case.

Any questions regarding the application should be directed to David N. Roberts, Manager, Certificates & Tariffs, at (270) 688–6712, Williams Gas Pipelines Central, Inc., P.O. Box 20008, Owensboro, Kentucky 42301.

Any person desiring to be heard or to make any protest with reference to said Application should on or before November 9, 2000, file with the Federal Energy Regulatory Commission, 888 First Street, NW., Washington, DC 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211 or 18 CFR 385.214) and the Regulations under the Natural Gas Act (18 CFR 157.10). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party to a proceeding or to participate as a party in any hearing therein must file a motion to intervene in accordance with the Commission's Rules. Beginning November 1, 2000, comments and protests may be filed electronically via the internet in lieu of paper. See, 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site at http://www.ferc.fed.us/efi/doorbell.htm.

Take further notice that pursuant to the authority contained in and subject to the jurisdiction conferred upon the Commission by Sections 7 and 15 of the Natural Gas Act and the Commission's Rules of Practice and Procedure, a hearing will be held without further notice before the Commission or its designee on this Application if no petition to intervene is filed within the time required herein, if the Commission on its own review of the matter finds that a grant of the abandonment is required by the public convenience and necessity. If a petition for leave to intervene is timely filed, or if the Commission, on it own motion believes that a formal hearing is required, further notice of such hearing will be duly given.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicant to appear or be represented at the hearing.

David P. Boergers,

Secretary.

[FR Doc. 00–27337 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EC01–1–000, et al.]

Wisconsin Public Service Corporation, et al.; Electric Rate and Corporate Regulation Filings

October 18, 2000.

Take notice that the following filings have been made with the Commission:

1. Wisconsin Public Service Corporation, Consolidated Water Power Company

[Docket No. EC01–1–000]

Take notice that on October 6, 2000, Wisconsin Public Service Corporation (Wisconsin Public Service) and Consolidated Water Power Company (Consolidated) (collectively, the

Applicants) filed an application pursuant to section 203 of the Federal Power Act requesting authorization for Wisconsin Public Service to purchase Consolidated's common equity interest in the Wisconsin River Power Company (Wisconsin River). Currently, Wisconsin Public Service owns 33.12 percent of Wisconsin River's common stock, while Consolidated owns 33.76 percent of Wisconsin River's stock. Wisconsin River owns and operates two hydroelectric generation facilities with an aggregate rated capacity of 35 MW.

Comment date: October 30, 2000, in accordance with Standard Paragraph E at the end of this notice.

2. Continental Energy Services, Inc., BBI Power Corporation

[Docket No. EC01–2–000]

Take notice that on October 10, 2000, pursuant to Section 203 of the Federal Power Act and Part 33 of the Commission's regulations, Continental Energy Services, Inc. and BBI Power Corporation filed a joint application for approval of the disposition of Continental's jurisdictional facilities that may result from BBI Power Corporation's proposed acquisition of Continental.

Continental states that the application has been served upon the Public Utility Commission of Texas and the Montana Public Service Commission.

Comment date: October 31, 2000, in accordance with Standard Paragraph E at the end of this notice.

3. FirstEnergy Trading Services, Inc., FirstEnergy Services, Inc.

[Docket Nos. EC01–3–000 and ER01–103–000]

Take notice that on October 11, 2000, FirstEnergy Trading Services, Inc. and FirstEnergy Services, Inc. tendered for filing pursuant to Sections 203 and 205 of the Federal Power Act and the Federal Energy Regulatory Commission's regulations thereunder an Application of FirstEnergy Trading Services, Inc. for Authority to Merge Into FirstEnergy Services, Inc. and Related Transactions. The Application included a proposed Market-Based Rate Power Sales Tariff of FirstEnergy Services, Inc. to become effective upon consummation of the merger.

Comment date: November 1, 2000, in accordance with Standard Paragraph E at the end of this notice.

4. Consumers Energy Company, Michigan Electric Transmission Company

[Docket No. EC01–4–000]

Take notice that on October 13, 2000, Consumers Energy Company (Consumers) and Michigan Electric Transmission Company (Michigan Transco) (collectively, Applicants), tendered for filing an application under Section 203 of the Federal Power Act petitioning the Commission for all authorizations necessary for Consumers to transfer to Michigan Transco 100 percent of its ownership interest in all of its electric transmission assets, and for Michigan Transco to acquire and operate the same. Applicants state that the proposed transfer of facilities to Michigan Transco, a wholly owned subsidiary of Consumers, is the first step in Consumers' plan to transfer control of, or to divest itself of ownership, operation and control of, its transmission assets to an unaffiliated third party.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

5. New York Independent System Operator, Inc.

[Docket No. ER01–94–000]

Take notice that on October 11, 2000, the New York Independent System Operator, Inc. (NYISO), requested an extension of Temporary Extraordinary Procedures for Correcting Market Design Flaws and Addressing Transitional Abnormalities.

The NYISO requests an effective date of November 1, 2000 and waiver of the Commission's notice requirements.

A copy of this filing was served upon all persons on the Commission's official service list in Docket No. ER00–2624–000, on those parties who have executed service agreements under the NYISO Open Access Transmission Tariff or under the New York Independent System Operator Market Administration and Control Area Services Tariff and on the electric utility regulatory agencies in New York, New Jersey and Pennsylvania.

Comment date: November 1, 2000, in accordance with Standard Paragraph E at the end of this notice.

6. Milford Power Limited Partnership

[Docket Nos. ER93–493–009 and ER99–3793–000]

Take notice that on October 13, 2000, Milford Power Limited Partnership (Milford), tendered for filing a supplement to its Semi-Annual Service Agreement Reports in the above-referenced docket.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

7. California Independent System Operator Corporation

[Docket Nos. EC96–19–055 and ER96–1663–058]

Take notice that on October 13, 2000, the California Independent System Operator Corporation (ISO) tendered for filing First Replacement Volume Nos. I and II of its FERC Electric Tariff in compliance with Order No. 614, issued on March 31, 2000 in Docket No. RM99–12, Designation of Electric Rate Schedule Sheets, FERC Stats. & Regs. ¶ 31,096 (2000).

The ISO states that this filing has been served upon the Public Utilities Commission of California, the California Energy Commission, the California Electricity Oversight Board, and all parties with effective Scheduling Coordinator Service Agreements under the ISO Tariff.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

8. Maine Public Service Company

[Docket No. ER00–1053–003]

Take notice that on October 13, 2000, Maine Public Service Company (MPS), as required by the September 15, 2000 order in Docket Nos. ER00–1053–000 and ER00–1053–002, *Maine Pub. Serv. Co.,* 92 FERC ¶ 61,208 (2000), submitted its open access transmission tariff in a format that complies with Order No. 614.

Copies of this filing were served on all affected state commissions and all parties on the service list in Docket Nos. ER00–1053–000 and ER00–1053–002.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

9. Enron Energy Marketing Corp.

[Docket No. ER00–3330–001]

Take notice that on October 13, 2000, Enron Energy Marketing Corp., tendered for filing a compliance filing including appropriate rate schedule designations for its revised FERC Rate Schedule No. 1 and accompanying Code of Conduct related to the Notice of Succession filed with the Commission on July 31, 2000, and conditionally accepted by the Commission, in Enron Energy Marketing Corp., Docket No. ER00–3330–000. As part of the compliance filing, references to Pacific Gas & Electric Company (PG&E) were removed because PG&E is not a utility affiliate of Enron Energy Marketing Corp.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

10. Louisville Gas And Electric Company/Kentucky Utilities Company

[Docket No. ER00–3363–001]

Take notice that on October 12, 2000, Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU) (hereinafter the Companies), tendered for filing a revised executed Delivery Scheduling and Balancing Agreement between the Companies and The Legacy Energy Group, LLC, to meet the service agreement designations as required in Order No. 614, FERC Stats. & Regs. ¶ 31,096 (2000).

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

11. New England Power Pool

[Docket Nos. OA97–237–000, OA97–608–000, ER97–1079–000, ER97–4421–000, ER97–3574–000, and ER98–499–000]

Take notice that on October 12, 2000, the New England Power Pool (NEPOOL) Participants Committee tendered for filing supplemental informational relating to rate surcharges determined in accordance with formula rates of the NEPOOL Open Access Transmission Tariff. The materials filed on October 12, 2000 supplement certain aspects, and correct certain other aspects, of NEPOOL's July 28, 2000 informational filing. The July 28, 2000 informational filing described the transmission charges that are in effect for the twelve month period commencing June 1, 2000. Both filings are made pursuant to the terms of the April 5, 1999 settlement agreement in the above-captioned dockets.

The NEPOOL Participants Committee states that copies of these materials were sent to the New England state governors and regulatory commissions, and the NEPOOL Participants.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

12. Carolina Power & Light Company

[Docket No. ER01–100–000]

Take notice that on October 12, 2000, Carolina Power & Light Company (CP&L), tendered for filing an executed Service Agreement between CP&L and PPL EnergyPlus, LLC. Service to this eligible buyer will be in accordance with the terms and conditions of CP&L's Market-Based Rates Tariff, FERC Electric Tariff No. 4, for sales of capacity and energy at market-based rates.

CP&L requests an effective date of October 4, 2000 for this Service Agreement.

Copies of the filing were served upon the North Carolina Utilities Commission and the South Carolina Public Service Commission.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

13. Mid-Continent Area Power Pool

[Docket No. ER01–104–000]

Take notice that on October 12, 2000, the Mid-Continent Area Power Pool (MAPP), on behalf of its members that are subject to Commission jurisdiction as public utilities under Section 201(e) of the Federal Power Act, filed an amendment to Schedule F (FERC Electric Tariff, First Revised Volume No. 1) that would clarify Section 2 regarding rollover rights.

A copy of this filing has been served on all MAPP members, Schedule F customers and the state commissions in the MAPP region.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

14. Mid-Continent Area Power Pool

[Docket No. ER01–105–000]

Take notice that on October 12, 2000, the Mid-Continent Area Power Pool (MAPP), on behalf of its members that are subject to Commission jurisdiction as public utilities under Section 201(e) of the Federal Power Act, filed certain amendments to Schedule F (FERC Electric Tariff, First Revised Volume No. 1) related to the scheduling and reservation provisions.

A copy of this filing has been served on all MAPP members, Schedule F customers and the state commissions in the MAPP region.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

15. Pinnacle West Capital Corporation

[Docket No. ER01–106–000]

Take notice that on October 12, 2000, Pinnacle West Capital Corporation (PWCC), tendered for filing a Service Agreement, Rate Schedule FERC No. 3, under PWCC's Rate Schedule FERC No. 1 for service to Arizona Public Service Company (APS).

A copy of this filing has been served on the Arizona Corporation Commission and APS.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

16. Arizona Public Service Company

[Docket No. ER01–107–000]

Take notice that on October 12, 2000, Arizona Public Service Company (APS), tendered for filing a Service Agreement No. 58 under APS' FERC Electric Tariff, Original Volume No. 3 for service to Pinnacle West Capital Corporation (PWCC).

A copy of this filing has been served on the Arizona Corporation Commission and PWCC.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

17. Tucson Electric Power Company

[Docket No. ER01–108–000]

Take notice that on October 12, 2000, Tucson Electric Power Company tendered for filing one (1) umbrella service agreement (for short-term firm service) and one (1) service agreement (for non-firm service) pursuant to Part II of Tucson's Open Access Transmission Tariff, which was filed in Docket No. ER00–771–000.

In compliance with Order No. 614, Tucson submits an Umbrella Agreement for Short-Term Firm Point-to-Point Transmission Service dated as of October 5, 2000 by and between Tucson Electric Power Company and Public Service Company of Colorado—FERC Electric Tariff Vol. No. 2, Service Agreement No. 142. No service has commenced at this time.

Tucson also submits a Form of Service Agreement for Non-Firm Point-to-Point Transmission Service dated as October 5, 2000 by and between Tucson Electric Power Company and Public Service Company of Colorado—FERC Electric Tariff Vol. No. 2, Service Agreement No. 143. No service has commenced at this time.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

18. Ameren Services Company

[Docket No. ER01–109–000]

Take notice that on October 12, 2000, Ameren Services Company (ASC), tendered for filing Service Agreements for Firm Point-to-Point Transmission Service between ASC and Ameren Energy, as Agent for Ameren Services Company. ASC asserts that the purpose of the Agreements is to permit ASC to provide transmission service to Ameren Energy, as Agent for Ameren Services Company pursuant to Ameren's Open Access Transmission Tariff.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

19. Cinergy Services, Inc.

[Docket No. ER01–110–000]

Take notice that on October 13, 2000, Cinergy Services, Inc. (Cinergy) and The Village of Bethel, Ohio tendered for filing a request for cancellation of

Service Agreement No. 16, under The Cincinnati Gas & Electric Company, FERC Electric Tariff Original Volume No. 1.

Cinergy requests an effective date of January 31, 2001.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

20. Cinergy Services, Inc.

[Docket No. ER01–112–000]

Take notice that on October 13, 2000, Cinergy Services, Inc. (Cinergy) and The Village of Blanchester, Ohio tendered for filing a request for cancellation of Service Agreement No. 17, under The Cincinnati Gas & Electric Company, FERC Electric Tariff Original Volume No. 1.

Cinergy requests an effective date of December 31, 2000.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

21. Cinergy Services, Inc.

[Docket No. ER01–113–000]

Take notice that on October 13, 2000, Cinergy Services, Inc. (Cinergy) and The Village of Georgetown, Ohio are requesting a cancellation of Service Agreement No. 18, under The Cincinnati Gas & Electric Company, FERC Electric Tariff Original Volume No. 1.

Cinergy requests an effective date of December 31, 2000.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

22. Cinergy Services, Inc.

[Docket No. ER01–114–000]

Take notice that on October 13, 2000, Cinergy Services, Inc. (Cinergy) and The Village of Ripley, Ohio tendered for filing a request for cancellation of Service Agreement No. 20, under The Cincinnati Gas & Electric Company, FERC Electric Tariff Original Volume No. 1.

Cinergy requests an effective date of January 31, 2001.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

23. Cinergy Services, Inc.

[Docket No. ER01–115–000]

Take notice that on October 13, 2000, Cinergy Services, Inc. (Cinergy) and The Village of Hamersville, Ohio tendered for filing a request for cancellation of Service Agreement No. 19, under The Cincinnati Gas & Electric Company, FERC Electric Tariff Original Volume No. 1.

Cinergy requests an effective date of January 31, 2001.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

24. Cinergy Services, Inc.

[Docket No. ER01–116–000]

Take notice that on October 13, 2000, Cinergy Services, Inc. (Cinergy) and Continental Energy Services, LLC are requesting a cancellation of Service Agreement No. 38, under Cinergy Operating Companies, Resale of Transmission Rights and Ancillary Service Rights, FERC Electric Tariff Original Volume No. 8.

Cinergy requests an effective date of October 9, 2000.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

25. Ameren Services Company

[Docket No. ER01–117–000]

Take notice that on October 12, 2000, Ameren Services Company (Ameren Services), tendered for filing a Network Operating Agreement and a Service Agreement for Retail Network Integration Transmission Service between Ameren Services and Central Illinois Light Company (CILCO). Ameren Services asserts that the purpose of the Agreements is to permit Ameren Services to provide transmission service to Central Illinois Light Company (CILCO) pursuant to Ameren's Open Access Tariff.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

26. Wisconsin Public Service Corporation

[Docket No. ER01–118–000]

Take notice that on October 13, 2000, Wisconsin Public Service Corporation (WPSC), tendered for filing Supplement No. 5 to its partial requirements service agreement with Washington Island Electric Cooperative (WIEC), Door County, Wisconsin. Supplement No. 5 provides WIEC's contract demand nominations for January 2001–December 2005, under WPSC's W–2A partial requirements tariff and WIEC's applicable service agreement.

The company states that copies of this filing have been served upon WIEC and to the State Commissions where WPSC serves at retail.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

27. Virginia Electric and Power Company

[Docket No. ER01–119–000]

Take notice that on October 13, 2000, Virginia Electric and Power Company (Dominion Virginia Power or the Company), tendered for filing the following:

Service Agreement for Firm Point-to-Point Transmission Service by Virginia Electric and Power Company to Southern Company Energy Marketing L.P., designated as Service Agreement No. 305 under the Company's Retail Access Pilot Program, pursuant to Attachment L of the Company's Open Access Transmission Tariff, FERC Electric Tariff, Second Revised Volume No. 5, to Eligible Purchasers effective June 7, 2000.

Dominion Virginia Power requests an effective date of October 13, 2000, the date of filing of the Service Agreements.

Copies of the filing were served upon Southern Company Energy Marketing L.P., the Virginia State Corporation Commission, and the North Carolina Utilities Commission.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

28. New York State Electric & Gas Corporation

[Docket No. ER01–120–000]

Take notice that on October 13, 2000, New York State Electric & Gas Corporation (NYSEG), tendered for filing as an initial rate schedule pursuant to Part 35 of the Federal Energy Regulatory Commission's Regulations, 18 CFR Part 35, an Interconnection Agreement (IA) with Consolidated Hydro New York, Inc., (Consolidated Hydro). The IA provides for interconnection service to Consolidated Hydro at the rates, terms, charges, and conditions set forth therein.

NYSEG is requesting that the IA become effective as of October 14, 2000.

Copies of this filing have been served upon the New York State Public Service Commission, Consolidated Hydro and the New York Independent System Operator, Inc.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

29. Allegheny Energy Service Corporation on behalf of Allegheny Energy Supply Company, LLC

[Docket No. ER01–121–000]

Take notice that on October 12, 2000, Allegheny Energy Service Corporation on behalf of Allegheny Energy Supply Company, LLC (Allegheny Energy

Supply), tendered for filing Service Agreement No. 96 to add one (1) new Customer to the Market Rate Tariff under which Allegheny Energy Supply offers generation services.

Allegheny Energy Supply requests a waiver of notice requirements for an effective date of September 11, 2000 for Oglethorpe Power Corporation.

Copies of the filing have been provided to the Public Utilities Commission of Ohio, the Pennsylvania Public Utility Commission, the Maryland Public Service Commission, the Virginia State Corporation Commission, the West Virginia Public Service Commission, and all parties of record.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

30. Allegheny Energy Service Corporation on behalf of Allegheny Energy Supply Company, LLC

[Docket No. ER01–122–000]

Take notice that on October 12, 2000, Allegheny Energy Service Corporation on behalf of Allegheny Energy Supply Company, LLC (Allegheny Energy Supply), tendered for filing Service Agreement No. 97 to add one (1) new Customer to the Market Rate Tariff under which Allegheny Energy Supply offers generation services.

Allegheny Energy Supply requests a waiver of notice requirements for an effective date of September 11, 2000 for Edison Mission Marketing & Trading, Inc.

Copies of the filing have been provided to the Public Utilities Commission of Ohio, the Pennsylvania Public Utility Commission, the Maryland Public Service Commission, the Virginia State Corporation Commission, the West Virginia Public Service Commission, and all parties of record.

Comment date: November 2, 2000, in accordance with Standard Paragraph E at the end of this notice.

31. Dynegy Inc., and Illinois Power Company

[Docket No. ER01–123–000]

Take notice that on October 13, 2000, Dynegy Inc. (Dynegy), tendered for filing a letter providing notice of withdrawal and requesting approval of the withdrawal of the Illinois Power Company from the Midwest Independent System Operator, Inc., effective November 1, 2001.

Dynegy states that copies of this filing were mailed to each person on the official service list in this proceeding and to affected state regulatory agencies.

Comment date: November 3, 2000, in accordance with Standard Paragraph E at the end of this notice.

Standard Paragraphs

E. Any person desiring to be heard or to protest such filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). All such motions or protests should be filed on or before the comment date. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of these filings are on file with the Commission and are available for public inspection. This filing may also be viewed on the Internet at http://www.ferc.fed.us/ online/rims.htm (call 202–208–2222 for assistance). Beginning November 1, 2000, comments and protests may be filed electronically via the internet in lieu of paper. See, 18 CFE 385.2001(a)(1)(iii) and the instructions on the Commission's web site at *http://www.ferc.fed.us/efi/doorbell.htm.*

David P. Boergers

Secretary.

[FR Doc. 00–27335 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket Nos. RM95–9–014 and RM95–9–015]

Open Access Same-Time Information System and Standards of Conduct

Issued October 12, 2000.

AGENCY: Federal Energy Regulatory Commission.

ACTION: Order Granting Time Extension and Twelve Hour Transition Period.

SUMMARY: In this order, the Federal Energy Regulatory Commission (Commission) grants a time extension, until March 1, 2001, for compliance with the OASIS Standards and Communications Protocols Document, Version 1.4, and allows a twelve hour transition period, on February 28, 2001, during which requests for service made by telephone or facsimile will be accepted.

FOR FURTHER INFORMATION CONTACT:
Marvin Rosenberg (Technical Information), Office of Economic Policy, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, (202) 208–1283
Paul Robb (Technical Information), Office of Electric Power Regulation, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, (202) 219–2702
Gary D. Cohen (Legal Information), Office of the General Counsel, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, (202) 208–0321

SUPPLEMENTARY INFORMATION:

Before Commissioners: James J. Hoecker, Chairman; William L. Massey, Linda Breathitt, and Curt Hebert, Jr.

Order Granting Requests for Extension of Time for Implementing OASIS Standards and Communications Protocols Document, Version 1.4

Introduction

As discussed below, we will grant requests from the OASIS How Working Group (How Group) and American Electric Power Service Corporation (AEP) [1] for a time extension, until March 1, 2001, for compliance with the OASIS Standards and Communications Protocols Document, Version 1.4 (S&CP Document) and for a twelve hour transition period, on February 28, 2001, during which requests for service made by telephone or facsimile will be accepted.

Background

On August 1, 2000, in *Open Access Same-time Information System and Standards of Conduct*, 65 Fed. Reg. 48,990, 92 FERC ¶ 61,146, FERC Stats. & Regs. ¶ 31,106 (2000) (August 1 Order), the Commission adopted a revised S&CP Document (Version 1.4) with an effective date of January 8, 2001.[2] The How Group and AEP each request that an extension, until March 1, 2001, be granted for compliance with the revised S&CP Document so that the implementation date will not coincide with the Winter Peak period.

Discussion

Both AEP and the How Group point out that the January 8, 2001 effective date coincides with the Winter Peak period. They suggest a March 1, 2001 effective date that would avoid the Winter Peak period and that would be preferable for accounting reasons. AEP

[1] AEP styled its request for a time extension as a ''request for rehearing,'' but the sole issue raised in the pleading is its request for a time extension.

[2] Based on comments from the industry that a six month lead time would be needed for compliance, the August 1 Order prescribed an effective date 150 days after publication in the **Federal Register**, FERC Stats. & Regs. ¶ 31,106 at 31,712.

states that: (1) The prompt publication of the August 1 Order in the **Federal Register** had the effect of advancing the effective date of the revised S&CP Document; (2) it would be preferable if the effective date would coincide with the end of a billing cycle; and (3) scheduling customer and operator training is more difficult at the end of the calendar year. For these reasons, AEP and the How Group each request that the Commission adopt a March 1, 2001 effective date for implementation of the revised OASIS S&CP Document.[3] We find these concerns reasonable and will grant the requested extension.

To allow a smooth transition, the How Group also requests that the Commission allow transmission providers to shut down their OASIS website operations for no more than twelve hours prior to midnight, local time, on February 28, 2001, and allow them to conduct transactions by telephone or facsimile as they transfer from OASIS S&CP Document, Version 1.3, to Version 1.4.

The Commission orders:

(A) The requests of AEP and the How Group for an extension, until March 1, 2001, for the industry to comply with the OASIS S&CP Document (Version 1.4) is hereby granted.

(B) The How Group's request on behalf of the industry for a twelve hour transition period on February 28, 2001, is hereby granted, as discussed in the body of this order.

By the Commission.

David P. Boergers,

Secretary.

[FR Doc. 00–26678 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–P

[3] The How Group also informs us that the transmission providers plan to display certain information on their respective OASIS websites on February 1, 2001, for informational purposes. We have no objection to these postings being made.

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 11730–000]

Black River Limited Partnership; Notice of Availability of Draft Environmental Assessment

October 19, 2000.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission) regulations, 18 CFR Part 380 (Order No. 486, 52 F.R. 47897), the Office of Energy Projects has reviewed the application for an original license for the existing and operating Alverno Hydroelectric Project, located on the Black River in the townships of Aloha, Benton, and Grant in Michigan (Cheboygan County) and has prepared an Environmental Assessment (EA) for the project.

Copies of the EA are available for review in the Public Reference Branch, Room 2–A, of the Commission's offices at 888 First Street, NE., Washington, DC 20426. The EA may also be viewed on the web at *http://www.ferc.us/online/rims.htm.* Please call (202) 208–2222 for assistance.

Any comments should be filed within 30 days from the date of this notice and should be addressed to David P. Boergers, Secretary, Federal Energy Regulatory Commission, 888 First Street, NE., Room 1–A, Washington, DC 20426. Please affix ''Alverno Hydroelectric Project No. 11730–000'' to the top page of all comments. For further information, contact John Costello at (202) 219–2914 or *john.costello@ferc.fed.us.* Beginning November 1, 2000, comments and protests may be filed electronically via the internet in lieu of paper. See, 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site at http://www.ferc.fed.us/efi/doorbell.htm.

David P. Boergers,

Secretary.

[FR Doc. 00–27339 Filed 10–24–00; 8:45 am]

BILLING CODE 6717–01–M

ENVIRONMENTAL PROTECTION AGENCY

[FRL–6891–5]

Agency Information Collection Activities: Submission for OMB Review; Comment Request; Federal Operating Permit Rules

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), this document announces that the following Information Collection Request (ICR) has been forwarded to the Office of Management and Budget (OMB) for review and approval: Part 71 Federal Operating Permit Rules, OMB Control Number 2060–0336, expiration date October 31, 2000. The ICR describes the nature of the information collection and its expected burden and cost; where appropriate, it includes the actual data collection instrument.

DATES: Comments must be submitted on or before November 24, 2000.

ADDRESSES: Send comments, referencing EPA ICR No. 1713.04 and OMB Control No. 2060–0336, to the following addresses: Sandy Farmer, U.S. Environmental Protection Agency, Collection Strategies Division (Mail Code 2822), 1200 Pennsylvania Avenue, NW., Washington, DC 20460; and to Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attention: Desk Officer for EPA, 725 17th Street, NW., Washington, DC 20503.

FOR FURTHER INFORMATION CONTACT: For a copy of the ICR contact Sandy Farmer at EPA by phone at (202) 260–2740, by e-mail at Farmer.sandy@epamail.epa.gov, or download off the Internet at http://www.epa.gov/icr and refer to EPA ICR No. 1713.04. For technical questions about the ICR contact Scott Voorhees at (919) 541–5348 or by e-mail at voorhees.scott@epa.gov.

SUPPLEMENTARY INFORMATION:

Title: Part 71 Federal Operating Permit Rules (OMB Control No. 2060–0336; EPA ICR No. 1713.04) expiring October 31, 2000. This is a request for extension of a currently approved collection.

Abstract: The part 71 program is a Federal operating permits program that will be implemented for sources located in Indian Country, Outer Continental Shelf sources, and also in those areas without acceptable part 70 programs. Title V of the Clean Air Act imposes on States the duty to develop, administer and enforce operating permit programs which comply with title V and requires EPA to stand ready to issue Federal operating permits when States fail to perform this duty.

Pursuant to regulations promulgated by EPA on February 19, 1999 (64 FR 8247) EPA has authority to establish part 71 programs within Indian Country and EPA began administering the program in Indian country on March 22, 1999. Since many Indian tribes lack the resources and capacity to develop operating permit programs, EPA will administer and enforce part 71 programs in the areas that comprise Indian Country in order to protect the air quality of areas under tribal jurisdiction.

The EPA will also issue permits to ''outer continental shelf'' (OCS) sources (sources located in offshore waters of the United States) pursuant to the requirements of section 328(a) of the Act. The EPA will also establish a part 71 program for a State when interim approval of a State program expires, if corrective program provisions have not been adopted and submitted to EPA in time for full approval. Since the suspension of the Federal program requirement runs out with the expiration of interim approval, the requirement that EPA promulgate a Federal program is effective immediately upon that expiration.

The EPA has the authority to establish a partial part 71 program in limited geographical areas of a state if EPA has approved a part 70 program (or combination of part 70 programs) for the remaining areas of the State. The EPA will promulgate a part 71 program for a permitting authority if EPA finds that a permitting authority is not adequately administering or enforcing its approved program and it fails to correct the deficiencies that precipitated EPA's finding.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. The **Federal Register** document required under 5 CFR 1320.8(d), soliciting comments on this collection of information was published on May 1, 2000 (65 FR 25322); no comments were received.

Burden Statement: The annual public reporting and record keeping burden for this collection of information is estimated to average 4.8 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Respondents/Affected Entities: Major air pollution sources subject to part 71 programs.

Estimated Number of Respondents: 95.

Frequency of Response: Semi-annually, annually, and on occasion.

Estimated Total Annual Hour Burden: 15,323 hours.

Estimated Total Annualized Capital, O&M Cost Burden: $0.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the addresses listed above. Please refer to EPA ICR No. 1713.04 and OMB Control No. 2060–0336 in any correspondence.

Dated: October 18, 2000.

Oscar Morales,

Director, Collection Strategies Division.

[FR Doc. 00–27403 Filed 10–24–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[OPPTS–00672A; FRL–6749–8]

National Action Plan for Alkyl-lead; Notice of Availability and Solicitation of Public Comment; Reopening of Comment Period

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice; Reopening of comment period.

SUMMARY: The US EPA has extended the time period in which it will accept public comments on the National Action Plan for Alkyl-lead. EPA has developed a draft National Action Plan to promote further voluntary reductions of use and exposure to alkyl-lead compounds. Alkyl-lead is used as a fuel additive to reduce ''knock'' in combustion engines and also to help lubricate internal engine components and protect intake and exhaust valves against recession. This plan was developed pursuant to the Agency's Multimedia Strategy for Priority Persistent, Bioaccumulative, and Toxic (PBT) Pollutants. This Notice announces the expansion of the availability of the Alkyl-lead National Action Plan for public review and comment.

DATES: Comments, identified by docket control number OPPTS–00672A, must be received on or before December 26, 2000.

ADDRESSES: Comments may be submitted by mail, electronically, or in person. Please follow the detailed instructions for each method as provided in Unit III. of the **SUPPLEMENTARY INFORMATION**. To ensure proper receipt by EPA, it is imperative that you identify docket control number OPPTS–00672A in the subject line on the first page of your response.

FOR FURHTER INFORMATION CONTACT: For general information contact: Barbara Cunningham, Director, Office of Program Management and Evaluation, Office of Pollution Prevention and Toxics (7401), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (202) 554–1404; e-mail address: TSCA-Hotline@epa.gov.

For technical information contact: Paul Matthai, Pollution Prevention Division (7409), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (202) 260–3385; e-mail address: matthai.paul@epa.gov

SUPPLEMENTARY INFORMATION:

I. Does this Action Apply to Me?

This action is directed to the public in general. This action may however, be of interest to persons who make, distribute, or use racing and aviation gasoline. Since other entities may also be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action. If you have any questions regarding the applicability of this action to a particular entity, consult the technical person listed under **FOR FURTHER INFORMATION CONTACT**.

II. How Can I Get Additional Information, Including Copies of this Document or Other Related Documents?

1. *Electronically*. You may obtain electronic copies of this document, and certain other related documents that might be available electronically, from the EPA Internet Home Page at http://www.epa.gov/pbt. To access this document, on the PBT Home Page select ''Strategy and Action Plans.''

2. *In person*. The Agency has established an official record for this action under docket control number 0PPTS–00672A. The official record consists of the documents specifically referenced in this action, any other information related to this action, including any information claimed as confidential business information (CBI). This official record includes the documents that are physically located in the docket as well as the documents that are referenced in those documents. The public version of the official record does not include any information claimed as CBI. The public version of the official record, which includes printed, paper versions of any electronic comments submitted during an applicable comment period, is available for inspection in the TSCA Nonconfidential Information Center, North East Mall Rm. B–607, Waterside Mall, 1200 Pennsylvania Ave., NW., Washington, DC. The Center is open from noon to 4 p.m., Monday through Friday, excluding

legal holidays. The telephone number for the Center is (202) 260–7099.

III. How and to Whom Do I Submit Comments?

As described in Unit I.C. of the document published in the **Federal Register** of August 25, 2000 (65 FR 51823) (FRL–6599–6) you may submit your comments through the mail, in person, or electronically. Please follow the instructions that are provided in the August 25, 2000 document. Do not submit any information electronically that you consider to be CBI. To ensure proper receipt by EPA, be sure to identify docket control number OPPTS–00672A in the subject line on the first page of your response.

IV. What Action is EPA Taking?

EPA is extending the comment period for alkyl-lead an additional 60 days. On November 16, 1998, EPA released its Agency-wide Multimedia Strategy for Priority Persistent, Bioaccumulative, and Toxic (PBT) Pollutants (PBT Strategy). The goal of the PBT Strategy is to identify and reduce risks to human health and the environment from current and future exposure to priority PBT pollutants. This document serves as the Draft National Action Plan for Alkyl-Lead, one of the 12 Level 1 priority PBT pollutants identified for the initial focus of action in the PBT Strategy.

EPA is requesting public comment on a strategy to address the remaining risks to human health and the environment from exposure to alkyl-lead: (1) Contribute to international efforts to reduce the use of alkyl-lead world-wide; (2) pursue voluntary initiatives to reduce the use of alkyl-lead in aircraft gasoline, race cars, and non-road vehicles such as farm machinery, marine vessels, construction equipment, and recreational vehicles; and (3) collect information as possible, given resource constraints, related to production, use, emissions, and continued exposure scenarios.

List of Subjects

Environmental protection.

Dated: October 4, 2000.

Susan H. Wayland,

Acting Assistant Administrator, Office of Prevention, Pesticides and Toxic Substances.

[FR Doc. 00–27406 Filed 10–24–00; 8:45 a.m.]

BILLING CODE 6560–50–S

ENVIRONMENTAL PROTECTION AGENCY

[FRL–6891–2]

National Advisory Council for Environmental Policy and Technology; Public Meeting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of public meeting.

SUMMARY: Under the Federal Advisory Committee Act, P.L. 92463, EPA gives notice of a meeting of the National Advisory Council for Environmental Policy and Technology (NACEPT). NACEPT provides advice and recommendations to the Administrator of EPA on a broad range of environmental policy and management issues.

NACEPT consists of a representative cross-section of EPA's partners and principle constituents who provide advice and recommendations on policy issues and serve as a sounding board for new strategies that the Agency is developing.

The Administrator of EPA has asked NACEPT to address several policy issues associated with human resource planning, integration of key Agency planning processes, and the identification of emerging issues facing the Agency.

DATES: The NACEPT will hold a 2-day public meeting on Wednesday November 8, from 8:30 am to 4:30 pm and Thursday November 9, 2000 from 8:30 am to 3:45 pm.

ADDRESSES: The NACEPT 2-day public meeting will be held at the Radisson Hotel Old Town Alexandria, located at 901 North Fairfax Street, Alexandria, Virginia . Materials or written comments may be transmitted to the Council through Gwendolyn Whitt, Designated Federal Officer, NACEPT RCC, U.S. EPA, Office of Cooperative Environmental Management (1601A), 1200 Pennsylvania Avenue NW., Washington, DC 20460. There will also be an opportunity for the public to make comments directly to the Council during the first day of the meeting. Oral comments will be limited to a total time of five minutes. Requests to make oral comments must be submitted no later than November 3, 2000 to Gwendolyn Whitt, at the address above or faxed to (202)–501–0661. Those who have not reserved time in advance, may make comments during the public comment session as time allows.

FOR FURTHER INFORMATION CONTACT: Gwendolyn Whitt, Designated Federal Officer, NACEPT, at (202)–564–5982.

Dated: October 12, 2000.

Gordon Schisler,

Deputy Director, Office of Cooperative Environmental Management.

[FR Doc. 00–27401 Filed 10–24–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–6891–1]

Good Neighbor Environmental Board Meeting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of meeting.

SUMMARY: The next meeting of the Good Neighbor Environmental Board, a federal advisory committee focused on environmental sustainability within the U.S.-Mexico border region, will take place in Brownsville, Texas, on November 2nd and 3rd, 2000. It will last from 8:30 a.m.—4:30 p.m. on Thursday, November 2nd, and from 8 a.m. until noon on Friday, November 3rd. The entire meeting is open to the public.

LOCATION: The meeting will take place at the Fort Brown Hotel & Resort (Holiday Inn), located at 1900 East Elizabeth Street in Brownsville, Texas. The hotel is one block from the international bridge to Mexico.

AGENDA: During the morning of the first day, the draft agenda calls for report-outs from Board Members on border-region activities, several informational briefings from local officials and organizations, and a public comment session late morning. After lunch, the meeting will continue with another guest presentation, followed by a planning session for the Board's upcoming Fifth Report to the President and Congress of the United States. The hotel site portion of the meeting currently is scheduled to end at 4:30 p.m., after which the Board will travel to the Cameron Park Community Center, 2100 Gregory, Brownsville for a briefing and informal discussion with Center officials scheduled to begin at approximately 5:30 p.m.

The second day of the meeting primarily will focus on ongoing Board business such as dissemination of the Board's Fourth Report, strategy sessions on increasing visibility, development of potential themes for upcoming reports, and additional discussion on the framework for its next report.

PUBLIC ATTENDANCE: The public is welcome to attend all portions of the meeting. Members of the public who plan to file written statements and/or make brief oral statements at the public comment session on the morning of November 2nd are encouraged to contact the Designated Federal Officer for the Board prior to the meeting.

BACKGROUND: The Good Neighbor Environmental Board was created by the Enterprise for the Americans Initiative Act of 1992. An Executive Order delegates implementing authority to the Administrator of EPA. The Board is responsible for providing advice to the President and the Congress on environmental and infrastructure issues and needs within the States contiguous to Mexico in order to improve the quality of life of persons residing on the United States side of the border. The statute calls for the Board to have representatives from U.S. Government agencies; the governments of the States of Arizona, California, New Mexico and Texas; and private organizations with expertise on environmental and infrastructure problems along the southwest border. The Board meets three times annually, primarily in various border locations. The U.S. Environmental Protection Agency gives notice of this meeting of the Good Neighbor Environmental Board pursuant to the Federal Advisory Committee Act (Pub. L. 92–463).

FOR FURTHER INFORMATION CONTACT: Elaine M. Koerner, Designated Federal Officer for the Good Neighbor Environmental Board: Office of Cooperative Environmental Management, Office of the Administrator, USEPA, MC1601A, 1200 Pennsylvania Ave. NW., Washington, DC 20004, (202) 564–1484, koerner.elaine@epa.gov.

Dated: October 13, 2000.

Elaine M. Koerner,

DFO, Good Neighbor Environmental Board.

[FR Doc. 00–27402 Filed 10–24–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[OPP–30501; FRL–6747–7]

Pesticide Products; Registration Applications

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces receipt of applications to register pesticide products containing new active ingredients not included in any previously registered products pursuant to the provisions of section 3(c)(4) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended.

DATES: Written comments, identified by the docket control number OPP–30501, must be received on or before November 24, 2000.

ADDRESSES: Comments may be submitted by mail, electronically, or in person. Please follow the detailed instructions for each method as provided in Unit I. of the **SUPPLEMENTARY INFORMATION.** To ensure proper receipt by EPA, it is imperative that you identify docket control number OPP–30501 in the subject line on the first page of your response.

FOR FURTHER INFORMATION CONTACT: The Regulatory Action Leader listed in the table below:

Regulatory Action Leader	Telephone number/ e-mail address	Mailing address	File symbol
Ann Sibold	(703) 305–6502; sibold.ann@epa.gov	Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., Washington, DC 20460	241–GAI
James A. Tompkins	(703) 305–6597; tompkins.james@epa.gov	Do.	59639–RNL and 63588–RE

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. Potentially affected categories and entities may include, but are not limited to:

Categories	NAICS codes	Examples of potentially affected entities
Industry	111	Crop production
	112	Animal production
	311	Food manufacturing
	32532	Pesticide manufacturing

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in the table could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether or not this action might apply to certain entities. If you have questions regarding the applicability of this action to a particular entity, consult the person listed under **FOR FURTHER INFORMATION CONTACT.**

B. How Can I Get Additional Information, Including Copies of this Document and Other Related Documents?

1. *Electronically*. You may obtain electronic copies of this document, and certain other related documents that might be available electronically, from the EPA Internet Home Page at http://www.epa.gov/. To access this document, on the Home Page select ''Laws and Regulations,'' ''Regulations and Proposed Rules,'' and then look up the entry for this document under the ''**Federal Register**--Environmental Documents.'' You can also go directly to the **Federal Register** listings at http://www.epa.gov/fedrgstr/.

2. *In person*. The Agency has established an official record for this action under docket control number OPP–30501. The official record consists of the documents specifically referenced in this action, any public comments received during an applicable comment period, and other information related to this action, including any information claimed as confidential business information (CBI). This official record includes the documents that are physically located in the docket, as well as the documents that are referenced in those documents. The public version of the official record does not include any information claimed as CBI. The public version of the official record, which includes printed, paper versions of any electronic comments submitted during an applicable comment period, is

available for inspection in the Public Information and Records Integrity Branch (PIRIB), Rm. 119, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The PIRIB telephone number is (703) 305–5805.

C. How and to Whom Do I Submit Comments?

You may submit comments through the mail, in person, or electronically. To ensure proper receipt by EPA, it is imperative that you identify docket control number OPP–30501 in the subject line on the first page of your response.

1. *By mail*. Submit your comments to: Public Information and Records Integrity Branch (PIRIB), Information Resources and Services Division (7502C), Office of Pesticide Programs (OPP), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

2. *In person or by courier*. Deliver your comments to: Public Information and Records Integrity Branch (PIRIB), Information Resources and Services Division (7502C), Office of Pesticide Programs (OPP), Environmental Protection Agency, Rm. 119, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA. The PIRIB is open from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The PIRIB telephone number is (703) 305–5805.

3. *Electronically*. You may submit your comments electronically by e-mail to: opp-docket@epa.gov, or you can submit a computer disk as described above. Do not submit any information electronically that you consider to be CBI. Avoid the use of special characters and any form of encryption. Electronic submissions will be accepted in WordPerfect 6.1/8.0 or ASCII file format. All comments in electronic form must be identified by docket control number OPP–30501. Electronic comments may also be filed online at many Federal Depository Libraries.

D. How Should I Handle CBI that I Want to Submit to the Agency?

Do not submit any information electronically that you consider to be CBI. You may claim information that you submit to EPA in response to this document as CBI by marking any part or all of that information as CBI. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. In addition to one complete version of the comment that includes any information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public version of the official record. Information not marked confidential will be included in the public version of the official record without prior notice. If you have any questions about CBI or the procedures for claiming CBI, please consult the person identified under **FOR FURTHER INFORMATION CONTACT.**

E. What Should I Consider as I Prepare My Comments for EPA?

You may find the following suggestions helpful for preparing your comments:

1. Explain your views as clearly as possible.
2. Describe any assumptions that you used.
3. Provide copies of any technical information and/or data you used that support your views.
4. If you estimate potential burden or costs, explain how you arrived at the estimate that you provide.
5. Provide specific examples to illustrate your concerns.
6. Offer alternative ways to improve the registration activity.
7. Make sure to submit your comments by the deadline in this notice.
8. To ensure proper receipt by EPA, be sure to identify the docket control number assigned to this action in the subject line on the first page of your response. You may also provide the name, date, and **Federal Register** citation.

II. Registration Applications

EPA received applications as follows to register pesticide products containing active ingredients not included in any previously registered products pursuant to the provisions of section 3(c)(4) of FIFRA. Notice of receipt of these applications does not imply a decision by the Agency on the applications.

Products Containing Active Ingredients Not Included in Any Previously Registered Products

1. File Symbol: 241–GAI. Applicant: BASF Corporation, P.O. Box 400, Princeton, NJ 08543–0400. Product Name: Chlorfenapyr SC Insecticide-Miticide. Type of product: Insecticide. Active ingredient: Chlorfenapyr 4-bromo-2-(4-chlorophenyl)-1-(ethoxymethyl)-5-(trifluoromethyl)-1H-pyrrole-3-carbonitrile at 21.44%. Proposed Classification/Use: None. For control of pests on fruiting vegetable crops in greenhouses.

2. File Symbol: 59639–RNL. Applicant: Valent USA Corporation, 1333 N. California #600, Walnut Creek, CA 94596. Product Name: Regiment. Type of product: Herbicide. Active ingredient: Bispyribac-sodium, sodium 2,6-bis[(4,6-dimethoxypyrimidin-2yl)oxy]benzoate at 81.6%. Proposed classification/Use: None/weed control in rice.

3. File Symbol: 63588–RE. Applicant: K-1 Chemical USA Inc., 11 Martine Avenue, 9th Floor, White Plaines, NY 10606. Product Name: Bispyribac-Sodium Technical. Type of product: Herbicide. Active ingredient: Bispyribac-sodium, sodium 2,6-bis[(4,6-dimethoxypyrimidin-2yl)oxy]benzoate at 98.0%. Proposed classification/Use: None/formulation of herbicides.

List of Subjects

Environmental protection, Pesticides and pest.

Dated: October 18, 2000.

James Jones,

Director, Registration Division, Office of Pesticide Programs.

[FR Doc. 00–27407 Filed 10–24–00; 8:45 am]

BILLING CODE 6560–50–S

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection(s) Being Reviewed by the Federal Communications Commission for Extension Under Delegated Authority 5 CFR 1320 Authority, Comments Requested

October 13, 2000.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection(s), as required by the Paperwork Reduction Act of 1995, Public Law 104–13. An agency may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a valid control number. Comments are requested concerning (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

DATES: Persons wishing to comment on this information collection should submit comments on or before December 26, 2000.

ADDRESSES: Direct all comments to Les Smith, Federal Communications Commissions, Room 1–A804, 445 12th Street, S.W., Washington, DC 20554 or via the Internet to lesmith@fcc.gov.

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collections contact Les Smith at 202–418–0217 or via the Internet at lesmith@fcc.gov.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–0132.

Title: Supplemental Information—72–76 MHz Operational Fixed Stations.

Form Number: FCC 1068 A.

Type of Review: Extension of a currently approved collection.

Respondents: Businesses or other for-profit entities; Non-profit institutions; Individuals; and State or Local Governments.

Number of Respondents: 300.

Estimated Time Per Response: 30 minutes.

Frequency of Response: On occasion reporting requirement.

Total Annual Burden: 150 hours.

Total Respondent Costs: $4,500.

Needs and Uses: FCC Rules require applicants to agree to eliminate any harmful interference caused by the operation to TV reception on either channel 4 or 5 that might develop. This form is required by the Communications Act of 1934, as amended, International Treaties, and FCC Rules 47 CFR Part 90.257. FCC staff will use the data to determine if the information that is submitted meets the FCC Rule requirements for the assignment of frequencies in the 72–76 MHz band.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

[FR Doc. 00–27422 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection(s) Being Submitted to OMB for Review and Approval

October 17, 2000.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection, as required by the Paperwork Reduction Act of 1995, Public Law 104–13. An agency may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a valid control number. Comments are requested concerning (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

DATES: Written comments should be submitted on or before November 24, 2000. If you anticipate that you will be submitting comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the contact listed below as soon as possible.

ADDRESSES: Direct all comments to Les Smith, Federal Communications Commission, Room 1–A804, 445 12th Street, S.W., Washington, DC 20554 or via the Internet to *lesmith@fcc.gov.*

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collections contact Les Smith at (202) 418–0217 or via the Internet at *lesmith@fcc.gov.*

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–0544.

Title: Commercial Leased Access Channels, 47 CFR 76.701.

Form Number: N/A.

Type of Review: Extension of a currently approved collection.

Respondents: Business or other for-profit entities

Number of Respondents: 100.

Estimate Time Per Response: 8 hours.

Frequency of Response: On occasion reporting requirements; Third party disclosure.

Total Annual Burden: 800.

Total Annual Costs: None.

Needs and Uses: Permitting cable operators to adopt policies regarding programming gives operators alternatives to banning broadcasts; for example, by adopting policies to rearrange broadcast times so as to accommodate adult audiences while lessening the risks of harm to children.

OMB Control Number: 3060–0711.

Title: Implementation of Section 34(a)(1) of the Public Utility Holding Company Act of 1935 (PUHCA), as amended by the Telecommunications Act of 1996, 47 CFR 1.5001–1.5007.

Form Number: N/A.

Type of Review: Extension of a currently approved collection.

Respondents: Business or other for-profit entities.

Number of Respondents: 15.

Estimate Time Per Response: 10 hours.

Frequency of Response: On occasion reporting requirements; Third party disclosure.

Total Annual Burden: 150 hours.

Total Annual Costs: $48,000.

Needs and Uses: 47 CFR Sections 1.500–1.5007 implement Section 34(a) of PUHCA. The rules provide filing requirements and procedures to expedite public utility holding company (PUHC) entry into the telecommunications industry. To achieve this goal, the regulations require a PUHC seeking determination of its status as an exempt telecommunications company (ETC) to file in good faith for a determination by the FCC. The Commission uses this information to determine whether a PUHC filer does satisfy the requisite statutory criteria for ETC status under Section 34(a)(1) of PUHCA, as amended.

OMB Control Number: 3060–0928.

Title: Application for Class A Television Broadcast Station Construction Permit or License.

Form Number: FCC 302–CA.

Type of Review: Extension of currently approved collection.

Respondents: Businesses or other for-profit entities; Not-for-profit institutions.

Number of Respondents: 958.

Estimated Time Per Response: 2 hours.

Frequency of Response: On occasion reporting requirement.

Total Annual Burden: 1,916 hours.

Total Annual Cost: $211,000.

Needs and Uses: LPTV stations use FCC Form 302–CA when seeking to convert to Class A status. FCC Form 302–CA requires a series of certifications by the Class A applicant as prescribed by the Community Broadcasters Protection Act of 1999 (CBPA). Licensees are required to provide weekly announcements to their listeners informing them that the applicant has applied for a Class A license and that the public has the opportunity to comment on the application prior to the FCC's action. The Commission's staff use the data from FCC Form 302–CA to confirm that the station has met the eligibility standards to convert their licenses to Class A status. Data are then extracted from FCC Form 302–CA for inclusion in the station's operating license.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

[FR Doc. 00–27420 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection(s) Being Reviewed by the Federal Communications Commission

October 18, 2000.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection(s), as required by the Paperwork Reduction Act of 1995, Public Law 104–13. An agency may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a valid control number. Comments are requested concerning (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

DATES: Written comments should be submitted on or before November 24, 2000. If you anticipate that you will be submitting comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the contact listed below as soon as possible.

ADDRESSES: Direct all comments to Judy Boley, Federal Communications Commission, Room 1–C804, 445 12th Street, SW, DC 20554 or via the Internet to jboley@fcc.gov.

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collection(s), contact Judy Boley at 202–418–0214 or via the Internet at jboley@fcc.gov.

SUPPLEMENTARY INFORMATION:

OMB Control No.: 3060–0853.

Title: Receipt of Service Confirmation Form and Adjustment of Funding Commitment and Modification to Receipt of Service Confirmation Form—Universal Service for Schools and Libraries.

Form No.: FCC Forms 486 and 500.

Type of Review: Extension of a currently approved collection.

Respondents: Business or other for-profit, not-for-profit institutions.

Number of Respondents: 40,000 respondents.

Estimated Time Per Response: 1.5 hours.

Frequency of Response: On occasion reporting requirements.

Total Annual Burden: 45,000 hours.

Total Annual Cost: N/A.

Needs and Uses: The Commission adopted rules providing support for all telecommunications services, Internet access, and internal connections for all eligible schools and libraries. To participate in the program, schools and libraries must confirm that they are actually receiving the services eligible for support via FCC Form 486. FCC Form 500 is used to adjust funding commitments and/or modify the dates for receipt of services.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

[FR Doc. 00–27421 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

[CC Docket No. 96–45; DA 00–2327]

Common Carrier Bureau Seeks Comment on Western Wireless's Supplemental Filing Relating to Its Petition for Designation as an Eligible Telecommunications Carrier on the Crow Reservation in Montana

AGENCY: Federal Communications Commission.

ACTION: Notice; solicitation of comments.

SUMMARY: In a Public Notice in this proceeding released on October 13, 2000, the Common Carrier Bureau sought comment on Western Wireless' petition and supplemental filing seeking designation of eligibility to receive federal universal service support for a service area comprised of the Crow Reservation in Montana.

DATES: Comments are due on or before November 24, 2000. Reply comments are due on or before December 11, 2000.

ADDRESSES: See **SUPPLEMENTARY INFORMATION** section for where and how to file comments.

FOR FURTHER INFORMATION CONTACT: Richard D. Smith (202) 418–7400 TTY: (202) 418–0484.

SUPPLEMENTARY INFORMATION: On August 4, 1999, Western Wireless filed with the Commission a petition under section 214(e)(6) seeking a designation of eligibility to receive federal universal service support for a service area comprised of the Crow Reservation in Montana. Specifically, Western Wireless contends that telecommunications service offered on the Crow Reservation is not subject to the jurisdiction of the state commission. On September 10, 1999, the Common Carrier Bureau released a Public Notice seeking comment on Western Wireless' petition for designation as an eligible telecommunications carrier (ETC). In response, the Montana Commission filed comments asking this Commission to dismiss the petition and allow the Montana Commission to consider the designation request.

In the *Twelfth Report and Order,* 65 FR 47941, August 4, 2000, this Commission concluded that it would resolve the threshold question of whether Western Wireless is subject to the jurisdiction of the Montana Commission for purposes of determining eligibility for federal support for services provided on the Crow Reservation. To permit Western Wireless a fair opportunity to present its case consistent with the guidance provided in the *Twelfth Report and Order,* the Commission allowed Western Wireless an opportunity to supplement its claim that the Montana Commission lacks jurisdiction to make the eligibility designations for service provided on the Crow Reservation.

On October 2, 2000, Western Wireless filed a Jurisdictional Supplement in response to the Commission's directive in the *Twelfth Report and Order* to support its contention that the state commission does not have jurisdiction to designate Western Wireless as an eligible telecommunications carrier on the Crow Reservation. Consistent with the procedures outlined in the *Twelfth Report and Order,* the Montana Commission and any other interested party shall have 30 days after publication of this Public Notice in the

Federal Register to respond to Western Wireless' original petition and supplemental filing. Interested parties will then have 15 days to file reply comments. The Commission will send a copy of this Public Notice, by overnight express mail, to the Montana Commission. The Commission will also publish this Public Notice in the **Federal Register**. To ensure that all interested parties are aware of the comment dates, the Common Carrier Bureau will issue a Public Notice following **Federal Register** publication specifying the exact comment and reply comment dates.

Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments as follows: comments are due November 24, 2000, and reply comments are due December 11, 2000. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings,* 63 FR 24121, May 1, 1998. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit electronic comments by Internet e-mail. To receive filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply. Parties who choose to file by paper must file an original and four copies of each filing. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554.

Parties also must send three paper copies of their filing to Sheryl Todd, Accounting Policy Division, Common Carrier Bureau, Federal Communications Commission, 445 Twelfth Street S.W., Room 5–B540, Washington, DC 20554. In addition, commenters must send diskette copies to the Commission's copy contractor, International Transcription Service, Inc., 1231 20th Street, N.W., Washington, D.C. 20037.

Pursuant to § 1.1206 of the Commission's rules, 47 CFR 1.1206, this proceeding will be conducted as a permit-but-disclose proceeding in which *ex parte* communications are permitted subject to disclosure.

Dated: October 18, 2000.

Katherine L. Schroder,

Division Chief, Accounting Policy Division.

[FR Doc. 00–27307 Filed 10–24–00; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL MARITIME COMMISSION

Notice of Agreement(s) Filed

The Commission hereby gives notice of the filing of the following agreement(s) under the Shipping Act of 1984. Interested parties can review or obtain copies of agreements at the Washington, DC offices of the Commission, 800 North Capitol Street, NW., Room 940. Interested parties may submit comments on an agreement to the Secretary, Federal Maritime Commission, Washington, DC 20573, within 10 days of the date this notice appears in the **Federal Register**.

Agreement No.: 011729
Title: CMA–CGM/Norasia Slot Charter Agreement
Parties:
CMA–CGM S.A.("CMA-CGM")
Norasia Container Lines Ltd. ("Norasia")
Synopsis: The proposed agreement authorizes CMA–CGM to charter space to Norasia on its vessels operating in the trade between the port of Los Angeles and ports in Japan, Korea and China. The agreement will expire on May 1, 2001 unless earlier terminated. The parties have requested expedited review.

Agreement No.: 011730
Title: The GWF/Dole Space Charter Agreement
Parties:
Great White Fleet ("GWF")
Dole Ocean Cargo Express, Inc. ("Dole")
Synopsis: The proposed Agreement would permit Dole to charter space to GWF in the trade between Freeport, Texas, and inland U.S. points via Freeport, and ports in Guatemala and Honduras, and inland points via those ports.

Agreement No.: 011731
Title: FOML/Great Western Agreement.
Parties:
Fesco Ocean Management Ltd.
Great Western Steamship Company.
Synopsis: The proposed agreement authorizes the parties to charter space to and from each other on their respective vessels operating in the trade between United States Pacific Coast ports and ports in the Far East. The parties have requested expedited review.

Dated: October 20, 2000.

By Order of the Federal Maritime Commission

Bryant L. VanBrakle,

Secretary.

[FR Doc. 00–27434 Filed 10–24–00; 8:45 am]

BILLING CODE 6730–01–P

FEDERAL MARITIME COMMISSION

Ocean Transportation Intermediary License; Revocations

The Federal Maritime Commission hereby gives notice that the following ocean transportation intermediary licenses have been terminated pursuant to section 19 of the Shipping Act of 1984 (46 U.S.C. app. 1718) and the regulations of the Commission pertaining to the licensing of Ocean Transportation Intermediaries, effective on the corresponding dates shown below:

LICENSE NUMBER: 15763N
NAME: Aerorep, Inc.
ADDRESS: 6819 NW 84th Avenue, Miami, FL 33166
DATE REVOKED: September 27, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 4632F
NAME: Combined Logistics, (U.S.A.) Inc.
ADDRESS: 7800 25th Street, Suite 110, Miami, FL 33122
DATE REVOKED: October 6, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 9410N
NAME: Connections International
ADDRRESS: 28301 Industrial Blvd., Suite F, Hayward, CA 94545
DATE REVOKED: September 7, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 9634N
NAME: Dolphin Express, Inc.
ADDRESS: 4201 Long Beach Blvd., #326, Long Beach, CA 90807–2021
DATE REVOKED: October 6, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 13988N
NAME: E.Z. Logistics Inc.
ADDRESS: 147–95 Farmers Blvd., Jamaica, NY 11434
DATE REVOKED: August 9, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 13188N

NAME: Express Ocean Lines, Ltd.
ADDRESS: 72 Linda Avenue, Suite 202, Staten Island, NY 10305
DATE REVOKED: September 18, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 4206F
NAME: International Logistics Corporation
ADDRESS: 1701 Quincy Avenue, Suite 5, Naperville, IL 60540
DATE REVOKED: October 6, 2000.
REASON: Failed to maintain a valid bond.

LICENSE NUMBER: 15547N
NAME: Mercury Lines Inc.
ADDRESS: 701 E. Linden Avenue, Linden, NJ 07036
DATE REVOKED: September 21, 2000.
REASON: Surrendered license voluntarily.

LICENSE NUMBER: 801–R
NAME: Stevens Shipping & Terminal Company
ADDRESS: 26 East Bay Street, P.O. Box 1468, Savannah, GA 31498–5801
DATE REVOKED: September 19, 2000.
REASON: Surrendered license voluntarily.

Sandra L. Kusumoto,

Director, Bureau of Consumer Complaints and Licensing.

[FR Doc. 00–27436 Filed 10–24–00; 8:45 am]

BILLING CODE 6730–01–P

FEDERAL MARITIME COMMISSION

Ocean Transportation Intermediary License Reissuance of License

Notice is hereby given that the following Ocean Transportation Intermediary license has been reissued by the Federal Maritime Commission pursuant to section 19 of the Shipping Act of 1984, as amended by OSRA 1998 (46 U.S.C. app. 1718) and the regulations of the Commission pertaining to the licensing of Ocean Transportation Intermediaries, 46 CFR 515.

License No.	Name/address	Date reissued
1227F	Fast Shipping Co., 201 Sevilla Avenue, Suite 306, Coral Gables, FL 33134	August 13, 2000.
4130NF	GSG Investment Inc. d/b/a Worldwide Logistics Company, 8801 Bellanca Avenue, Los Angeles, CA 90045.	September 7, 2000.

Sandra L. Kusumoto,

Director, Bureau of Consumer Complaints and Licensing.

[FR Doc. 00–27435 Filed 10–24–00; 8:45 am]

BILLING CODE 6730–01–P

FEDERAL RESERVE SYSTEM

Change in Bank Control Notices; Acquisitions of Shares of Banks or Bank Holding Companies

The notificants listed below have applied under the Change in Bank Control Act (12 U.S.C. 1817(j)) and 225.41 of the Board's Regulation Y (12 CFR 225.41) to acquire a bank or bank holding company. The factors that are considered in acting on the notices are set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The notices are available for immediate inspection at the Federal Reserve Bank indicated. The notices also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing to the Reserve Bank indicated for that notice or to the offices of the Board of Governors. Comments must be received not later than November 8, 2000.

A. Federal Reserve Bank of Dallas (W. Arthur Tribble, Vice President) 2200 North Pearl Street, Dallas, Texas 75201–2272:

1. Wendell Don Sapaugh, Sulphur Springs, Texas; to acquire additional voting shares of Sulphur Springs Bancshares, Inc., Sulphur Springs, Texas, and thereby indirectly acquire additional voting shares of City National Bank, Sulphur Springs, Texas.

Board of Governors of the Federal Reserve System, October 19, 2000.

Robert deV. Frierson,

Associate Secretary of the Board.

[FR Doc. 00–27324 Filed 10–24–00; 8:45 am]

BILLING CODE 6210–01–P

FEDERAL RESERVE SYSTEM

Change in Bank Control Notices; Acquisitions of Shares of Banks or Bank Holding Companies

The notificants listed below have applied under the Change in Bank Control Act (12 U.S.C. 1817(j)) and 225.41 of the Board's Regulation Y (12 CFR 225.41) to acquire a bank or bank holding company. The factors that are considered in acting on the notices are set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The notices are available for immediate inspection at the Federal Reserve Bank indicated. The notices also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing to the Reserve Bank indicated for that notice or to the offices of the Board of Governors. Comments must be received not later than November 9, 2000.

A. Federal Reserve Bank of Atlanta. (Cynthia C. Goodwin, Vice President) 104 Marietta Street, N.W., Atlanta, Georgia 30303–2713:

1. Nathan L. Carriere, Jr., and Peggy Smith Carriere, Maringouin, Louisiana; to acquire additional voting shares of Banque of Maringouin Holding Company, Maringouin, Louisiana, and thereby indirectly acquire additional voting shares of Bank of Maringouin, Maringouin, Louisiana.

2. Alton B. Smith, Jr., and Luella D. Smith, Maringouin, Louisiana; to acquire additional voting shares of Banque of Maringouin Holding Company, Maringouin, Louisiana, and thereby indirectly acquire additional voting shares of Bank of Maringouin, Maringouin, Louisiana.

3. Alfred Newman, Sevierville, Tennessee, to acquire additional voting shares of Tennessee State Bancshares, Inc., Pigeon Forge, Tennessee, and thereby indirectly acquire additional voting shares of Tennessee State Bank, Pigeon Forge, Tennessee.

Board of Governors of the Federal Reserve System, October 20, 2000.

Jennifer J. Johnson,

Secretary of the Board.

[FR Doc. 00–27442 Filed 10–24–00; 8:45 am]

BILLING CODE 6210–01–P

FEDERAL RESERVE SYSTEM

Formations of, Acquisitions by, and Mergers of Bank Holding Companies

The companies listed in this notice have applied to the Board for approval, pursuant to the Bank Holding Company Act of 1956 (12 U.S.C. 1841 *et seq.*) (BHC Act), Regulation Y (12 CFR Part 225), and all other applicable statutes and regulations to become a bank holding company and/or to acquire the assets or the ownership of, control of, or the power to vote shares of a bank or bank holding company and all of the banks and nonbanking companies owned by the bank holding company, including the companies listed below.

The applications listed below, as well as other related filings required by the Board, are available for immediate inspection at the Federal Reserve Bank indicated. The application also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing on the standards enumerated in the BHC Act (12 U.S.C. 1842(c)). If the proposal also involves the acquisition of a nonbanking company, the review also includes whether the acquisition of the nonbanking company complies with the standards in section 4 of the BHC Act (12 U.S.C. 1843). Unless otherwise noted, nonbanking activities will be conducted throughout the United States. Additional information on all bank holding companies may be obtained from the National Information Center website at www.ffiec.gov/nic/.

Unless otherwise noted, comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors not later than November 17, 2000.

A. Federal Reserve Bank of Boston (Richard Walker, Community Affairs Officer) 600 Atlantic Avenue, Boston, Massachusetts 02106–2204:

1. *Northwest Mutual Holding Company,* Winsted, Connecticut; to become a bank holding company by acquiring Northwest Community Bank, Winsted, Connecticut.

2. *Litchfield Mutual Holding Company,* Litchfield, Connecticut; to become a bank holding company by acquiring Litchfield Bancorp, Litchfield, Connecticut.

3. *Northwest Mutual Holding Company,* Winsted, Connecticut; to merge with Litchfield Mutual Holding Company, and thereby acquire Litchfield Bancorp, Litchfield, Connecticut. The successor bank holding company will be called Connecticut Mutual Holding Company.

B. Federal Reserve Bank of Atlanta (Cynthia C. Goodwin, Vice President) 104 Marietta Street, N.W., Atlanta, Georgia 30303–2713:

1. *Compass Bancshares, Inc.,* Birmingham, Alabama; to merge with FirstTier Corporation, Northglenn, Colorado, and thereby indirectly acquire FirstTier Bank, Northglenn, Colorado; and Firstate Bank, Kimball, Nebraska.

C. Federal Reserve Bank of Kansas City (D. Michael Manies, Assistant Vice President) 925 Grand Avenue, Kansas City, Missouri 64198–0001:

1. *SSB Management LLC,* Wilber, Nebraska, and First National Johnson Bancshares, Inc, Johnson, Nebraska; to acquire Wilber Co., Wilber, Nebraska, and thereby indirectly acquire Saline State Bank, Wilber, Nebraska. In connection with these applications, SSB Management has applied to become a bank holding company and acquire Saline State Insurance Agency, LLC, Wilber, Nebraska, and thereby engage in general insurance activities pursuant to § 225.28(b)(11)(iii)(A) of Regulation Y. Wilber Co. also has applied to acquire Saline State Insurance Agency.

2. *Wilber Co.,* Wilber, Nebraska; to acquire 23.34 percent of the voting shares of NebraskaLand Financial Services, Inc., North Platte, Nebraska, and thereby indirectly acquire NebraskaLand National Bank, North Platte, Nebraska.

Board of Governors of the Federal Reserve System, October 19, 2000.

Robert deV. Frierson,

Associate Secretary of the Board.

[FR Doc. 00–27323 Filed 10–24–00; 8:45 am]

BILLING CODE 6210–01–P

FEDERAL RESERVE SYSTEM

Formations of, Acquisitions by, and Mergers of Bank Holding Companies

The companies listed in this notice have applied to the Board for approval, pursuant to the Bank Holding Company Act of 1956 (12 U.S.C. 1841 *et seq.*) (BHC Act), Regulation Y (12 CFR Part 225), and all other applicable statutes and regulations to become a bank holding company and/or to acquire the assets or the ownership of, control of, or the power to vote shares of a bank or bank holding company and all of the banks and nonbanking companies owned by the bank holding company, including the companies listed below.

The applications listed below, as well as other related filings required by the Board, are available for immediate inspection at the Federal Reserve Bank indicated. The application also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing on the standards enumerated in the BHC Act (12 U.S.C. 1842(c)). If the proposal also involves the acquisition of a nonbanking company, the review also includes whether the acquisition of the nonbanking company complies with the standards in section 4 of the BHC Act (12 U.S.C. 1843). Unless otherwise noted, nonbanking activities will be conducted throughout the United States. Additional information on all bank holding companies may be obtained from the National Information Center website at www.ffiec.gov/nic/.

Unless otherwise noted, comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors not later thanNovember 20, 2000.

A. Federal Reserve Bank of Atlanta (Cynthia C. Goodwin, Vice President) 104 Marietta Street, N.W., Atlanta, Georgia 30303–2713:

1. Southern Community Bancorp, Orlando, Florida; to acquire 100 percent of the voting shares of Southern Community Bank of Southwest Florida, Bonita Springs, Florida (in organization).

2. PAB Bankshares, Inc., Valdosta, Georgia; to acquire 100 percent of the voting shares of Friendship Community Bank, Ocala, Florida.

Board of Governors of the Federal Reserve System, October 20, 2000.

Jennifer J. Johnson,

Secretary of the Board.

[FR Doc. 00–27441 Filed 10–24–00; 8:45 am]

BILLING CODE 6210–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of the Secretary

Office of the Assistant Secretary for Planning and Evaluation; Technical Review Panel on the Medicare Trustees Reports; Notice of November 15 Meeting

AGENCY: Office of the Secretary, Office of the Assistant Secretary for Planning and Evaluation, HHS.

ACTION: Notice of November 15 meeting.

SUMMARY: In accordance with section 10(a) of the Federal Advisory Committee Act, this notice announces the fifth meeting of the Technical Review Panel on the Medicare Trustees Reports (the Panel). This meeting is open to the public.

Pursuant to Public Law 92–463 (the Federal Advisory Committee Act), the Panel was established on August 12, 1999, by the Secretary of HHS to review the methods and assumptions underlying the annual reports of the Board of Trustees of the Hospital Insurance and Supplementary Medical Insurance Trust Funds.

DATES: The fifth meeting will be held on November 15, 2000 (9 a.m. to 5 p.m.).

ADDRESSES: The meeting will be held at the Health Care Financing Administration (HCFA) Headquarters, Conference Center, Room C–112, 7500 Security Boulevard, Baltimore, Maryland.

FOR FURTHER INFORMATION CONTACT: Ariel Winter, Executive Director, Technical Review Panel on the Medicare Trustees Reports, Department of Health and Human Services, Room 442E, 200 Independence Avenue, SW, Washington, DC, 20201, (202) 690–6860, medpanel@osaspe.dhhs.gov. Additional information is also available on the Panel's web site: http://aspe.hhs.gov/health/medpanel.htm.

SUPPLEMENTARY INFORMATION: The Board of Trustees of the Medicare Trust Funds (the Hospital Insurance (HI) and Supplementary Medical Insurance (SMI) Trust Funds) report annually on the funds' financial condition. The reports describe the trust funds' current and projected financial condition, within the next 10 years (the short term) and over the subsequent 65 years (the long term). The Medicare Board of Trustees has directed the Secretary of Health and Human Services (who is one of the Trustees) to establish a panel of technical experts to review the assumptions and methods underlying the HI and SMI annual reports.

The panel's review includes the following four topics:

1. Medicare assumptions (*e.g.,* utilization rates, medical price increases).
2. Projection methodology (how assumptions are used to make cost projections).
3. Long-range growth assumptions for HI and SMI.
4. Use of stochastic forecasting techniques.

The Panel will issue its findings in a report to the Secretary and the other Trustees.

The Panel consists of six members who are experts in the fields of economics and actuarial science: Dale Yamamoto, F.S.A., M.A.A.A., F.C.C.A, E.A., B.S.—Chair; Len Nichols, Ph.D.; David Cutler, Ph.D.; Michael Chernew, Ph.D.; James Robinson, F.S.A., M.A.A.A., Ph.D.; and Alice Rosenblatt, F.S.A., M.A.A.A., M.A. The members' terms will end August 12, 2001. Sam Gutterman, F.S.A., F.C.A.S., M.A.A.A., M.A., is a consultant to the Panel.

The Panel's next meeting will be held on November 15, 2000 (9 a.m. to 5 p.m.). At this meeting, the Panel will edit and approve its final report to the Trustees. The meeting will be held at the Health Care Financing Administration (HCFA) Headquarters, Conference Center, Room C–112, 7500 Security Boulevard, Baltimore, Maryland. The meeting is open to the public, but attendance is limited to the space available.

Individuals or organizations that wish to make 5-minute oral presentations on the issues covered by the Panel should contact the Executive Director by 5 p.m. on November 1, 2000. The number of oral presentations may be limited to the time available. A written copy of the presenters' oral remarks should be submitted to the Executive Director no later than 5 p.m. on November 7, 2000, for distribution to the Panel members.

Any interested member of the public may submit written comments to the Executive Director and Panel members for review. Comments should be received by the Executive Director by 5 p.m. on November 7, 2000, for distribution to the Panel members.

Individuals requiring sign language interpretation for the hearing impaired and/or other special accommodation, should contact Ariel Winter at (202) 690–6860 by November 1, 2000.

Dated: October 18, 2000.

Margaret A. Hamburg,

Assistant Secretary for Planning and Evaluation.

[FR Doc. 00–27429 Filed 10–24–00; 8:45 am]

BILLING CODE 4154–05–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Agency for Toxic Substances and Disease Registry

Solicitation of Volunteers To Serve as Special Consultants on the Community and Tribal Subcommittee of the ATSDR Board of Scientific Counselors

AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR), Department of Health and Human Services (HHS).

ACTION: Notice.

This notice announces ATSDR's need for special consultants to provide citizens' input on the Community and Tribal Subcommittee (CTS) of ATSDR's Board of Scientific Counselors (BSC).

DATES: Applications should be completed and returned by Friday, November 17, 2000.

BACKGROUND: The CTS provides the BSC with input, recommendations, and advice on ATSDR's community/tribal community involvement practices, programs, and policies from community/tribal members who live near hazardous waste sites or are otherwise affected by hazardous substances in the community environment. The subcommittee was established, at the request of the Assistant Administrator, ATSDR, to provide the agency, through its Board of Scientific Counselors, with a formal vehicle for citizen input.

FOR FURTHER INFORMATION CONTACT: To express interest in serving as a special consultant and obtain additional information, contact: Sandee Coulberson, Designated Federal Official, CTS, ATSDR (E–56), 1600 Clifton Road, NE, Atlanta, GA 30033 (404) 639–6002 (Direct Line) Toll-free 1–888–422–8737.

SUPPLEMENTARY INFORMATION: ATSDR conducts public health-related activities at hazardous waste sites and releases, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) (42 U.S.C. 9601 *et seq.*). ATSDR established a BSC which is chartered under the Federal Advisory Committee Act (5 U.S.C. app.). In 1994, the chair of the BSC, ATSDR, appointed three community/tribal representatives as consultants to ensure that its deliberations included the views of community and tribal members who live around Superfund and other hazardous waste sites and are representatives of groups that work at local, regional, or national locations with these affected communities. To supplement the work of these consultants, nine additional community and tribal representatives were added. Four members of the BSC serve on this Subcommittee, one of which was appointed as chair.

The Community Tribal Subcommittee's objective is to provide the BSC, ATSDR, with the views and recommendations of community and tribal representatives on ATSDR's community involvement programs, practices, policies, and other relevant issues impacting communities and tribes who live near Superfund and hazardous waste sites. The Subcommittee will review ATSDR's community involvement programs, and policies; provide advice, findings, and recommendations to the Board on these issues; and bring broad-based community and tribal involvement issues to the attention of the Board of Scientific Counselors.

The Subcommittee will present findings, advice, and recommendations to the full Board. The BSC will discuss and review reports of the Subcommittee and may forward recommendations to ATSDR for action. The Community/Tribal Subcommittee will periodically meet and/or hold conference calls.

A group consisting of special consultants, CTS Chair and the DFO will review the applications and develop a short list to be recommended for consideration. The Agency, in consultation with the BSC chair, will then select the four community representatives to serve as special consultants to the CTS, with special consideration given to the recommended slate. The special consultants are not members of the CTS, and therefore, do not have voting privileges.

Accordingly, any person who lives in a community affected by an NPL or other hazardous waste site, or is a representative of a group that works at local, regional, or national locations with these communities, who wishes to be considered for serving as a special consultant on this Subcommittee should write or call the ATSDR contact person listed above to express interest and obtain additional information.

The Director, Management Analysis and Services Office, has been delegated the authority to sign **Federal Register** Notices pertaining to announcements of meetings and other committee management activities, for both the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry

Dated: October 17, 2000.

Carolyn J. Russell,

Director, Management Analysis and Services Office, Centers for Disease Control and Prevention.

Application

Community and Tribal Subcommittee, Agency for Toxic Substances and Disease Registry (ATSDR), October, 2000

Please fill out this form as legibly as possible to ensure that photocopies of it are readable. *Applications must be received by Friday, November 17, 2000.* Please send to:

Sandee Coulberson, Designated Federal Official, CTS, ATSDR (E–56), 1600 Clifton Road, NE, Atlanta, GA 30033, Phone: (404) 639–6002 (Direct Line), Toll-free 1–888–422–8737, Fax: (404) 639–4699

Name:
Street Address:
City, State, Zip:
Telephone:
Fax:
E-mail:
Employment and employer(s) for last five years:

Please check the corresponding box for your response to the following questions; please keep any written responses brief.

(1) Do you live in a community or on a reservation that contains a site contaminated with toxic substances or are you a member of an organization that works on environmental health/toxic substance issues with such affected communities/tribes? Check all that apply

yes, live in such a community/reservation

yes, member of such an organization

no

If you checked no, please skip to question # 9.

ATSDR Community and Tribal Subcommittee Application, continued:

(2) What type of site is it?

National Priorities List (Superfund NPL)
Department of Defense
Not sure/don't know
Department of Energy
Department of Defense
State
Other

(3) What is the status of site cleanup?

Cleanup underway
Cleanup completed
No work done
Not sure/don't know

(4) How would you characterize your community/tribe?

Rural
Suburban
Urban
Tribal Lands
Not sure/don't know

(5) How would you characterize the racial/ethnic makeup of your community/tribe?

White
Asian
African-American
Native American
Hispanic
Mixed/no group predominate
Not sure/don't know

(6) How would you characterize the economic status of your community/tribe?

Lower income
Middle income
Upper income
Not sure/don't know

(7) Do you believe your personal/family health has been harmed due to exposure to toxic substances in the environment?

Yes
Possibly
No

(7a) *If you are a trial member,* is contamination of traditional food supply thought to be a problem?

Yes Possibly No

ATSDR Community and Tribal Subcommittee Application, continued:

(8) Are you a member of a community/tribal organization focused on the site?

Yes No

(8a) If yes, please describe

(9) Are you familiar with the Agency for Toxic Substances and Disease Registry (ATSDR)?

Yes No

(10) Have you either sought assistance from, or previously been involved with ATSDR?

Yes No

(11) Has ATSDR sponsored a health assessment or health study in your community?

Yes No Not sure/don't know

(12) Have you attended other national or regional ATSDR meetings in the last 5 years?

Yes No

(13) Are you a member of an organization—other than the one you may have noted in question 8—focused on toxic substances/environmental health?

Yes No

(13a) If yes, what is the scope of the organization?

Local Regional National

(13b) Please describe the organization

(14) How many years have you been involved in toxic substance/environmental health issues?

Years

(15) How many hours per month on average can you make available for telephone calls, periodic meetings, and review of materials?

Hours per month

(16) Have you in the past or are you now participating in an advisory group similar in structure to the Community Tribal Subcommittee?

Yes No

(16a) If yes, please describe the group and your role

(17) QUALIFICATIONS/BACKGROUND: Please briefly note your knowledge of/experience with toxic substance/environmental health issues. List relevant self-education/research, workshops attended, and/or formal training.

(18) CURRENT ISSUES: What are your views on ATSDR's current approach to working with communities/tribes?

(19) EXPECTATIONS: What type of input, recommendations, and advice do

you envision the Subcommittee providing, and what type of outreach would you intend to do in order to formulate your recommendations to the Board of Scientific Counselors?

[FR Doc. 00–27372 Filed 10–24–00; 8:45 am]

BILLING CODE 4163–70–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Agency for Toxic Substances and Disease Registry

Community/Tribal Subcommittee and the Board of Scientific Counselors, Agency for Toxic Substances and Disease Registry: Meetings.

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), the Agency for Toxic Substances and Disease Registry (ATSDR) announces the following subcommittee and committee meetings.

Name: Community/Tribal Subcommittee (CTS).

Times and Dates:

8:30 a.m.–4 p.m., November 28, 2000
8:30 a.m.–4 p.m., November 29, 2000

Place: The Westin Peachtree Plaza Hotel, 210 Peachtree Street, NW., Atlanta, Georgia 30303.

Status: Open to the public, limited by the available space. The meeting room accommodates approximately 60 people.

Purpose: This subcommittee brings to the Board advice, citizen input, and recommendations on community and tribal programs, practices, and policies of the Agency.

Matters To Be Discussed: Agenda items include an update on Action Items and Recommendations from previous meeting; CTS update on Cultural Sensitivity Training; discussion on implementation of task forces; discussion of Freedom of Information Act (FOIA) process at Department of Defense and Department of Energy sites; update on the Office of Urban Affairs health intervention and health care activities at sites; and, an update on Research Agenda Building activities.

Name: Board of Scientific Counselors, ATSDR.

Times and Dates:

8:30 a.m.–5:05 p.m., November 30, 2000.
8:30 a.m.–12:10 p.m., December 1, 2000.

Place: The Westin Peachtree Plaza Hotel, 210 Peachtree Street, NW., Atlanta, Georgia 30303.

Status: Open to the public, limited by the available space. The meeting room accommodates approximately 60 people.

Purpose: The Board of Scientific Counselors, ATSDR, advises the Secretary; the Assistant Secretary for Health; and the Administrator, ATSDR, on ATSDR programs to ensure scientific quality, timeliness, utility, and dissemination of results. Specifically, the Board advises on the adequacy of science in ATSDR-supported research, emerging problems that require scientific investigations, accuracy and currency of the science in ATSDR reports, and program areas to emphasize or de-emphasize. In addition, the Board recommends research programs and conference support for which the Agency awards grants to universities, colleges, research institutions, hospitals, and other public and private organizations.

Matters To Be Discussed: Agenda items will include ATSDR updates; review of the ATSDR Research Agenda, and a review of the public comments and implementation plans; discussion on exposure investigations and biomarkers; discussion on current events impacting ATSDR; an overview of Community and Tribal Subcommittee meeting issues and recommendations; discussion of activities related to Libby, Montana, growth of environmental pediatric units, and Minority Health Program; and, an overview on ATSDR new directions. Written comments are welcomed and should be received by the contact person listed below prior to the opening of the meeting.

Agenda items are subject to change as priorities dictate.

Contact Person for More Information: Robert Spengler, Sc.D., Executive Secretary, BSC, ATSDR, M/S E–28, 1600 Clifton Road, NE, Atlanta, Georgia 30333, telephone 404/639–0708.

The Director, Management Analysis and Services Office, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities for both CDC and the Agency for Toxic Substances and Disease Registry.

Dated: October 17, 2000.

Carolyn J. Russell,

Director, Management Analysis and Services Office, Centers for Disease Control and Prevention.

[FR Doc. 00–27374 Filed 10–24–00; 8:45 am]

BILLING CODE 4163–70–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

ICD–9–CM Coordination and Maintenance Committee; Meeting

National Center for Health Statistics (NCHS), Data Policy and Standards Staff, announces the following meeting.

Name: ICD–9–CM Coordination and Maintenance Committee meeting.

Time and Date: 9 a.m.–5 p.m., November 17, 2000.

Place: The Health Care Financing Administration (HCFA), Multi-purpose Room, 7500 Security Boulevard, Baltimore, Maryland.

Status: Open to the public, limited only by the space available.

Purpose: The ICD–9–CM Coordination and Maintenance (C&M) Committee will hold its final meeting of the calendar year 2000 cycle on Friday November 17, 2000. The C&M meeting is a public forum for the presentation of proposed modifications to the International Classification of Diseases, Ninth-Revision, Clinical Modification.

Matters to be Discussed: Agenda items include:

Hemophilia carrier status
Developmental hip dislocation
Heart failure
Constipation
Urologic conditions
Clinical trial participant
Dental caries
Implementation of the ICD–10–PCS coding system
Removal of Intra-aortic balloon pump
Transcervical fetal oxygen saturation
Abdominal cerclage (FspOs) monitoring
Addenda

Contact Person for Additional Information: Amy Blum, Medical Classification Specialist, Data Policy and Standards Staff, NCHS, 6526 Belcrest Road, Room 1100, Hyattsville, Maryland 20782, telephone 301/458–4106 (diagnosis), Amy Gruber, Health Insurance Specialist, Division of Acute Care, HCFA, 7500 Security Blvd., Room C4–07–07, Baltimore, Maryland, 21244 telephone 410–786–1542 (procedures).

Notice: In the interest of security, HCFA has instituted stringent procedures for entrance into the building by non-government employees. Persons without a government I.D. must show a photo I.D. and sign-in at the security desk upon entering the building.

The Director, Management Analysis and Services Office, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities, for both CDC and the Agency for Toxic Substances and Disease Registry.

Dated: October 17, 2000.

Carolyn J. Russell,

Director, Management Analysis and Services Office, Centers for Disease Control and Prevention.

[FR Doc. 00–27373 Filed 10–24–00; 8:45 am]

BILLING CODE 4160–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Invention; Availability for Licensing: Tissue Microarrays for Rapid Molecular Profiling

AGENCY: National Institutes of Health, Public Health Service, DHHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by agencies of the U.S.

Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 207 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

ADDRESSES: Licensing information may be obtained by contacting Uri Reichman, Ph.D., M.B.A., at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852–3804; Telephone: 301/496–7736 ext. 240; Fax: 301/402–0220; E-mail: reichmau@od.nih.gov. A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

SUPPLEMENTARY INFORMATION: Advances in medical research and the successful development of new, improved diagnostic tools and therapeutic agents are often dependent on the ability to screen thousands of clinical samples for molecular markers in a high-throughput fashion. This is particularly critical in the ''post-genomics'' era, where the number of genes to be analyzed is often much high than the number of samples evaluated. DNA microarray (''DNA chip'') and related genome-screening tools have made it possible to screen the genome to discover genes with medical utility. However, before they can be utilized in developing improved diagnostics and therapeutic applications these early discoveries in genomics and proteomics need to be tested and validated.

The technology presented here, called Tissue Microarrays or ''Tissue Chips'' is specifically designed to fill the need of the medical community for high throughput screening of hundreds of molecular markers in thousands of cell or tissue samples on a single microscope slide.

Tissue Microarrays include hundreds or even thousands of tiny discs (approx. 1 mm in diameter) of tissue specimens, fixed and arranged on a single microscope slide. The technology provides an automated means to generate thousands of copies of this kind of slide, slides that then can be used for specific molecular analyses, such as DNA and mRNA in situ hybridization and protein immunostaining.

A typical application of tissue microarrays in cancer research and product development is the analysis of several hundred breast tumors from patients at different stages of disease development (normal breast, atypia, in situ cancer, invasive cancer, metastases) to identify the specific step at which gene alterations take place, as well as the frequency of these alterations. In another example, tissue microarrays can be constructed from tissue materials in a retrospective study design, where one can immediately correlate the expression of a molecular marker with poor prognosis. Furthermore, tissue microarrays can be used to screen many different diseases at once, such as multiple different tumor types, non-malignant tissues, and normal tissues and cells.

The data accumulated from these type of studies can serve as the basis for the development of diagnostic and prognostic tools for disease, classification of diseases into molecularly defined subgroups, as well as for identifying targets for therapeutic regimens for treating the disease.

Tissue microarrays are useful in the early-stage discovery of gene targets in genomic research, in validation of such targets, in the testing and optimization of diagnostic tests, as well as in the quality control of molecular detection schemes. In the quality control field, it would be possible to provide a copy of a tissue microarray with commercial histological (IHC or ISH) test kits for QC procedure. Tissue microarrays could also be used to standardize pathology interpretations by sending copies of the same slides to different pathologists. Electronic database archives of previously analyzed tissue arrays could also be utilized as a teaching tool of anatomy and pathology for students, clinical lab technicians and physicians.

The manufacturing of tissue microarrays is a critical step in the success of the technology. The NIH group has developed a manual tissue microarray device, which facilitates development of tissue microarrays. In addition, a prototype of an automated tissue microarrayer has been developed. This instrument consists of a donor specimen station and a recipient block station. An XY robotic arm retrieves cylindrical tissue specimens from the donor block and inserts them into assigned locations at cylindrical receptacles in the donor paraffin block. When the recipient tissue microarray block has been constructed, it is sectioned into 200 to 300 thin sections with a microtome. The resulting sections are then laid down and fixed on a microscope slide. The apparatus is controlled by a computer, which also stores the addressable sample locations.

The commercial potential of the present technology is enormous. It is estimated that the total market for microarray high-throughput screening in 1999 was $176 million. With an estimated annual rate growth of 33%, the market size is expected to approach $1 billion by 2005 (Source: Biosearch Online). Tissue microarray market is tied in with the other biochip markets, but it also presents an opportunity to expand microarray research and development into an entirely new direction. For example, most of the current microscopic tissue based analyses could in the future take place in a tissue microarray format, which provides several hundred-fold higher throughput than conventional analyses.

The technology is available for licensing in its entirety or in parts. A list of the inventions available for licensing, along with a brief summary of each invention, is shown below.

Licensing of Tissue Microarrays Instrumentation and Related Fluorescence Systems

(1) NIH Reference No. E–002–98/0 (USSN 60/075,979, PCT/US99/04001), entitled ''Tumor Tissue Microarrays for Rapid Molecular Profiling'', originally filed 02/25/98, PCT filed 02/24/99. Inventors: S. Leighton, O. Kallionemi and J. Kononen.

(2) NIH Reference No. E–273–99/0 (USSN 60/170,461), entitled ''Methods and Apparatus for Constructing Tissue Microarrays'', filed 12/13/99. Inventors: O. Kallionemi, G. Sauter, S. Leighton and J. Kononen.

These two patent applications disclose the specifics of the microarray-maker instrument. With the advances in the field of genomics it is predicted that the demand for tissue microarrays and thus the demand for tissue microarray instruments will increase rapidly in the next several years. Also offered for licensing (E–273–90/0) is an integrated tissue microarray system. The system includes three stations, *i.e.* array-making station, array processing station and a detection system (fluorescent imager). Licensing of either and/or both of the instrument inventions is particularly recommended for manufacturers of scientific and medical instrumentation.

(3) NIH Reference No. E–272–99/0 (USSN 60/154,601), entitled ''Signal Counting for In Situ Hybridization'', filed 9/17/99. Inventors: O. Kallionemi, J. Kononen, L. Buendorf, E. Dougherty and A. Grigoryan.

The accurate detection and quantitation of fluorescence signal associated with FISH is critical for the molecular analysis of arrayed tissue specimens. In spite of recent improvements in fluorescence optics and related techniques, quantitation of FISH has not been perfected yet. This invention discloses a device and method for improving the accuracy of fluorescence spot counting. This has been accomplished mainly through the following improvements: (1) A method to analyze ratios of test and reference spot signals in a field of view, (2) an imaging system to acquire confocal images to cells to provide a set of different layers of the same cells, at different positions along the Z-axis, and (3) a software program to make use of the three-dimensional nature of the images, which makes the identification of FISH signals more accurate. Licensing of an algorithm for automated FISH spot counting is recommended for manufacturers of scientific and medical instrumentation and in particular for manufacturers of commercial imaging devices as well as companies that specialize in providing fluorescent probes for molecular biology research.

Licensing of Applications of Tissue Microarrays

(4) NIH Reference No. E–007–99/0 (USSN 60/106,038, PCT/US99/04000), entitled ''Tissue Microarrays for Rapid Molecular Profiling'', originally filed 10/28/98, PCT filed 02/24/99. Inventors: O. Kallioniemi, G. Sauter and J. Kononen.

(5) NIH Reference No. E–274–99/0 (USSN 60/171,262), entitled ''Methods of Making and Using Microarrays'', filed 12/15/99. Inventors: O. Kallionemi and G. Sauter.

These two inventions disclose methods of using tissue microarrays for a wide variety of clinical applications. E–007–99/0 describes in great detail high-throughput screening studies of thousands of tissue samples. These studies, ordinarily requiring many days to perform, can be completed in only a few hours when tissue microarrays are used. Licensees of this invention will be able to manufacture tissue microarrays using clinical samples and distribute the panels and companion reagents to the medical and research community. Commercially produced microarrays could be developed for use as reference standards for certain diseases or custom made for specific needs.

E–274–99/0 describes the use of tissue microarrays for educational, standardization and OC (histological test kits) purposes. With respect to the first proposed use, licensees will be able, for example, to distribute microarray panels and companion reagents in medical teaching institutions. With respect to the latter two uses, standard microrray panels could be included in clinical test kits that are histological (IHC or ISH) procedures.

Tissue Microarray technology and its applications have been described in several publications, such as Nature Medicine 4:844 (1998), Cancer Research 59:803 (1999), J Natl Cancer Inst. 91:1758 (1999), Clin Cancer Res 5:1966 (1999), J Natl Cancer Inst, 92:1252 (2000).

Dated: October 6, 2000.

Jack Spiegel,

Director, Division of Technology Development and Transfer, Office of Technology Transfer.

[FR Doc. 00–27355 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, Public Health Service, DHHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by agencies of the U.S. Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 207 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

ADDRESSES: Licensing information and copies of the U.S. patent applications listed below may be obtained by writing to the indicated licensing contact at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852–3804; telephone: 301/496–7057; fax: 301/402–0220. A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

A Cultured Cell Line which Expresses the GLU4 Glucose Transporter Isoform Labeled with a Short Hemaglutinin Peptide and a Modified Green Fluorescence Protein

Samuel W. Cushman (NIDDK), DHHS Reference No. E–264–00/0 filed 26 Jul 2000; Licensing Contact: Marlene Shinn; 301/496–7056 ext. 285; email: shinnm@od.nih.gov.

The aforementioned invention is currently available through a Biological Materials License as a research tool. Insulin regulates glucose uptake by inducing the translocation of GLUT4, a glucose transporter isoform expressed in fat and muscle, from intracellular components to the plasma membrane. The NIH announces the discovery of a cell line that expresses the GLUT4 glucose transporter isoform with a short hemaglutin peptide (HA) and a modified green fluorescent protein (GFP). The HA peptide is recognized by a specific antibody when GLUT4 is in the plasma membrane but not when GLUT4 is sequestered inside the cell. The modified GFP can be detected by its fluorescence whether it is inside the cell or on the cell surface. This allows the HA label to quantitate the GLUT4 subcellular distribution and the GFP label, the total GLUT4 expression. Therefore, this invention can be used in high through-put screening, as an assay reagent, and it may aid specifically in ascertaining compounds that have the insulin-like effect of stimulating GLU4 translocation from an intracellular compartment to the cell surface.

Dmt-tic Di- and Tri-Peptidic Derivatives and Related Compositions and Methods of Use

Lawrence H. Lazarus (NIEHS), DHHS Reference No. E–103–00/0 filed 24 Mar 2000; Licensing Contact: Marlene Shinn; 301/496–7056 ext. 285; e-mail: shinnm@od.nih.gov.

A major obstacle in the treatment of many cancers involves the clinical manifestation of drug resistance. Currently, toxic substances are used in clinical and therapeutic settings to inhibit glycoproteins in the cell membrane of some cancer cells that have the ability to pump out of the cell drugs that would be potentially lethal. The most common of these glycoproteins is the 170-kd ATP-dependent transmembrane efflux pump. The multidrug resistance (MDR1) phenotype, however, is not the sole source of drug resistance since MDR1 is a member of a superfamily of proteins structurally related to the transmembrane P-glycoproteins.

NIH scientists have prepared a series of δ-opiod analogs of Dmt-tic (2′,6′-dimethyl-L-tyrosine-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid). At least one of the analogs, which is biologically stable and exerts no known side effects, has been observed to inhibit the ability of MDR1 to pump out a fluorescent probe from the cell membrane. Thus, these analogs might represent novel chemosensitizing agents to treat both hematologic malignancies (lymphomas) and solid tumors (e.g. breast and colon) without toxic effects in patients.

In addition, this invention provides more potent δ-opioid antagonists and δ-opiod antagonists with duel binding affinity and biological activity toward δ-opiod and μ-opiod receptors. These compounds therefore, have the potential to treat opiate and alcohol abuse, neurological diseases, neuropeptide or neurotransmitter imbalances, neurological and immune dysfunction, graft rejections through immunosuppression with antagonists, pain control through short half-life agonists, and shock and brain injuries.

Scratch Wound Assay Device

Katherine Malinda et al. (NINR), Serial No. 09/496,134 filed 01 Feb 2000; Licensing Contact: Dale Berkley; 301/496–7735 ext. 223; e-mail: berkleyd@od.nih.gov.

Tissue wounds undergo a complex and ordered series of events to repair tissue. These events may include infiltration of inflammatory immune cells as part of the process to remove and destroy necrotic tissue, increased vascularization by angiogenic factors, and increased cell proliferation and extracellular matrix deposition. Although the basic process of tissue repair has been characterized, the individual steps and factors necessary to carry out this complex series of events are not yet well understood or fully identified. Accordingly, there is a need to develop a way of reproducibly injuring a layer of cells to study the effects of different compounds of treatments on the ability of the remaining cells to repair the damaged area.

The present invention provides a device that reproducibly makes a wound of a desired size in a cell layer grown on a cell culture material. The device allows researchers to use small volumes of cells and test materials suggesting its use as a tool in high throughput screening of compounds. This provides researchers with a faster, more accurate way of screening large numbers of factors and determining the effects of cell growth and migration agents in model wounds produced in the cell, organ, or tissue layer.

Method of in vitro T cell Differentiation of CD34+ Progenitor Cells

Ruiz et al. (NIAID), DHHS Reference No. E–206–98/0 filed 29 Oct 1999; Licensing Contact: J. P. Kim; 301/496–7056 ext. 264; e-mail: kimj@od.nih.gov.

The present invention relates to a human in vitro system for inducing the growth and de novo differentiation of T cells from CD34+ progenitor cells in the presence of various cytokine cocktails and lymph node stroma. The mature T cells which are generated may be used to treat individuals with primary or acquired T cell immunodeficiencies, including HIV infection.

Dated: October 13, 2000.

Jack Spiegel,

Director, Division of Technology, Development and Transfer, Office of Technology Transfer, National Institutes of Health.

[FR Doc. 00–27356 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, Public Health Service, DHHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by agencies of the U.S. Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 207 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

ADDRESSES: Licensing information and copies of the U.S. patent applications listed below may be obtained by writing to the indicated licensing contact at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852–3804; telephone: 301/496–7057; fax: 301/402–0220. A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

A Plasmid for Expression of a Soluble Form of HIV–1 Integrase Protein

Robert Craigie et al. (NIDDK), NIH Reference No. E–108–00/0; Licensing Contact: J.P. Kim; 301/496–7056 ext. 264; e-mail: kimj@od.nih.gov.

Integrase is an essential HIV enzyme and a promising target for antiviral therapy. Integrase protein is required to assay for inhibitors of this enzyme and for mechanistic studies on HIV DNA integration. Further, drugs targeted to integrase would provide a new therapeutic approach to the treatment of AIDS and could be used in combination therapy with drugs that target RT and protease. The subject plasmid can be used to produce large quantities of a soluble form of HIV–1 integrase protein for such work.

TTP as a Regulator of GM–CSF mRNA Deadenylation and Stability

Ester Carballo-Jane, Wi S. Lai, Perry J. Blackshear (NIEHS), NIH Reference No. E–204–99/0 filed 13 Aug 1999; Licensing Contact: Vasant Gandhi; 301/496–7056 ext. 244; e-mail: gandhiv@od.nih.gov.

The disclosed invention provides materials and methods to treat granulocytopenia (low white cell count in the blood) which is characterized by a reduced number of granulocytes (relative) or an absence of granulocytes (absolute). This condition is commonly associated with cancer chemotherapy, but is seen less frequently in a number of conditions including the use of propylthiouracil, radiotherapy for marrow ablation for bone marrow transplantation, aplastic anemia, systemic lupus erythematosus, AIDS and a variety of other situations. The invention proposes a method to increase GM–CSF levels in a treated subject, and this increase is achieved by inhibiting the degradation of GM–CSF messenger RNA (mRNA). Tristetraprolin (TTP) is one member of a family of cys-cys-cys-his (CCCH) zinc finger proteins, and it is a factor that binds to and causes the instability of GM–CSF mRNA. Methods are provided for the development of screening assays for molecules that inhibit the binding of TTP and its related proteins to GM–CSF mRNA, or otherwise inhibit the effect of TTP to promote breakdown of the mRNA, leading in turn to increased mRNA stability and enhanced production of GM–CSF. Compounds identified by such screens, and their derivatives, could be useful in treating granulocytopenia from whatever cause.

Novel Post-Transcriptional Regulatory Elements and Uses Thereof

George N. Pavlakis and Filomena Nappi (NCI), NIH Reference Nos. E–143–98/0 filed 22 May 1998 and E–143–98/1 filed 22 May 1999; Licensing Contact: Carol Salata; 301/496–7735 ext. 232; e-mail: salatac@od.nih.gov.

This invention concerns a novel post-transcriptional regulatory element that can function as an RNA nucleo-cytoplasmic transport element (NCTE) and its use to make recombinant attenuated HIV strains useful as vaccines. HIV regulates its expression by controlling the nuclear transport of unspliced mRNA encoding structural proteins. HIV utilizes the Rev/RRE system. RRE (Rev responsible element) is an HIV encoded NCTE, which is part of every HIV RNA encoding the structural genes (Gag/Pol and Env). Rev is an HIV encoded protein which binds to RRE. This interaction is essential for nucleo-cytoplasmic transport of the RRE containing viral mRNAs and the expression of Gag/Pol and Env proteins. The inventors have produced an attenuated HIV by disabling Rev/RRE, by point mutations, and inserting in its place the novel murine NCTE of the invention. The resultant HIV is attenuated between 50 and 200 fold compared to wild type HIV. Claimed at the novel NCTE, recombinant retroviruses comprising the NCTE and vaccines.

Dated: October 6, 2000.

Jack Spiegel,

Director, Division of Technology, Development and Transfer, Office of Technology Transfer, National Institutes of Health.

[FR Doc. 00–27358 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Consensus Development Conference on Adjuvant Therapy for Breast Cancer

Notice is hereby given of the National Institutes of Health (NIH) Consensus Development Conference on ''Adjuvant Therapy for Breast Cancer,'' which will be held November 1–3, 2000, in the NIH's Natcher Conference Center, 9000 Rockville Pike, Bethesda, Maryland 20892. The conference begins at 8:00 am on November 1 and 2, and at 9:00 am on November 3 and is open to the public.

Each year, more than 180,000 women in the United States are diagnosed with breast cancer, the most common type of non-skin cancer among women in this country. Through continuing research into new treatment methods, women with breast cancer now have more effective treatment options than ever before. Studies have shown that adjuvant therapy—treatment to kill cancer cells that may have begun to spread, or metastasize, from the breast tumor—given in addition to surgery or other primary therapies increases a woman's chance of long-term survival.

Two types of systemic adjuvant therapy, either alone or in combination, are used for breast cancer. Adjuvant chemotherapy involves a combination of anticancer drugs. Adjuvant hormone therapy deprives cancer cells of the female hormone estrogen, which some breast cancer cells need to grow. In addition to these systemic therapies, radiation therapy is sometimes used as a local adjuvant treatment to help destroy breast cancer cells that have spread to nearby tissues.

The rapid pace of discovery in this area continues to broaden the knowledge base from which informed treatment decisions can be made. The purpose of this conference is to clarify, for clinicians, patients, and the general public, various issues regarding the use of adjuvant therapy for breast cancer. After 1½ days of presentations and audience discussion of the latest adjuvant therapy research, an independent, non-Federal consensus development panel will weigh the scientific evidence and draft a statement that will be presented to the conference audience on the third day. The consensus development panel's statement will address the following key questions:

Which factors should be used to select systemic adjuvant therapy?
For which patients should adjuvant hormonal therapy be recommended?
For which patients should adjuvant chemotherapy be recommended? Which agents should be used and at what dose or schedule?
For which patients should postmastectomy radiotherapy be recommended?
How do side effects and quality-of-life issues factor into individual decision-making about adjuvant therapy?
What are promising new research directions for adjuvant therapy?

On the final day of the conference, the panel's draft statement will be read in public, at which time members of the public are invited to offer comments on the draft.

The primary sponsors of this meeting are the National Cancer Institute and the NIH Office of Medical Applications of Research. Cosponsors include the National Institute of Nursing Research and the NIH Office of Research on Women's Health.

This is the 114th Consensus Development Conference held by the NIH in the 23-year history of the Consensus Development Program. Advance information about the conference and conference registration materials may be obtained from Prospect Associates of Silver Spring, Maryland, by calling (301) 592–3320 or by sending e-mail to *breastcancer@prospectassoc.com.* Prospect Associates' address is 10720 Columbia Pike, Suite 500, Silver Spring, Maryland 20901–4437. A conference agenda and registration information is also available on the NIH Consensus Program Web site at *http://consensus.nih.gov.*

Dated: October 13, 2000.

Ruth L. Kirschstein,

Principal Deputy Director, National Institutes of Health.

[FR Doc. 00–27357 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Cancer Institute; Notice of Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2), notice is hereby given of the meeting of the National Cancer Institute Board of Scientific Advisors.

The meeting will be open to the public as indicated below, with attendance limited to space available. Individuals who plan to attend and need special assistance, such as sign language interpretation or other reasonable accommodations, should notify the Contact Person listed below in advance of the meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(6) and 552b(c)(9)(B), Title 5 U.S.C. The discussions could reveal information of a personal nature where disclosure would constitute a clearly unwarranted invasion of personal privacy and the premature disclosure of discussions related to personnel and confidential administrative information would be likely to significantly frustrate the subsequent implementation of recommendations.

Name of Committee: National Cancer Institute Board of Scientific Advisors.

Date: November 16–17, 2000.

Open: November 16, 8:30 am to 5 pm; November 17, 8:30 am to 2 pm.

Agenda: Report of the Director, NCI; Ongoing and New Business, Status Reports, Budget Presentation, Reports of Special Initiatives, and RFA/RFP Concept Reviews.

Closed: November 16, 5 pm to 6 pm.

Agenda: To review and evaluate personnel and programmatic issues.

Place: National Cancer Institute, 9000 Rockville Pike, Building 31, C Wing, 6 Floor, Conference Room 10, Bethesda, MD 20892.

Contact Person: Paulette S. Gray, Ph.D., Executive Secretary, Deputy Director, Division of Extramural Activities, National Cancer Institute, National Institutes of Health, 6116 Executive Boulevard, Room 8141, Bethesda, MD 20892, (301) 496–4218.

(Catalogue of Federal Domestic Assistance Program Nos. 93.392, Cancer Construction; 93.393, Cancer Cause and Prevention Research; 93.394, Cancer Detection and Diagnosis Research; 93.395, Cancer

Treatment Research; 93.396, Cancer Biology Research; 93.397, Cancer Centers Support; 93.398, Cancer Research Manpower; 93.399, Cancer Control, National Institutes of Health, HHS)

Dated: Octoberr 16, 2000.

LaVerne Y. Stingfield,

Director, Office of Federal Advisory Committee Policy, National Institutes of Health.

[FR Doc. 00–27350 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Center for Complementary and Alternative Medicine; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Center for Complementary and Alternative Medicine Special Emphasis Panel, NCCAM–H07 SEP.

Date: November 9, 2000.

Time: 8:00 AM to 5:00 PM.

Agenda: To review and evaluate grant applications.

Place: Neuroscience Center, National Institutes of Health, 6001 Executive Blvd., Bethesda, MD 20892.

Contact Person: Cecelia Maryland, Grants Technical Assistant, National Center for Complementary and Alternative Medicine, National Institutes of Health, Building 31, Room 5B50, Bethesda, MD 20892, (301) 480–2419.

Dated: October 16, 2000.

LaVerne Y. Stringfield,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 00–27353 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Human Genome Research Institute; Notice of Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2), notice is hereby given of a meeting of the Board of Scientific Counselors, National Human Genome Research Institute.

The meeting will be open to the public as indicated below, with attendance limited to space available. Individuals who plan to attend and need special assistance, such as sign language interpretation or other reasonable accommodations, should notify the Contact Person listed below in advance of the meeting.

The meeting will be closed to the public as indicated below in accordance with the provisions set forth in section 552b(c)(6), Title 5 U.S.C., as amended for the review, discussion, and evaluation of individual intramural programs and projects conducted by the National Human Genome Research Institute, including consideration of personnel qualifications and performance, and the competence of individual investigators, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Board of Scientific Counselors, National Human Genome Research Institute.

Date: November 13–15, 2000.

Open: November 13, 2000, 6:00 p.m. to 6:30 p.m.

Agenda: To discuss program documents.

Place: Airlie House, 6802 Airlie Road, Warrenton, VA 20187.

Closed: November 14, 2000, 8:30 a.m. to Adjournment on November 15, 2000.

Agenda: To review and evaluate personal qualifications and performance, and competence of individual investigators.

Place: Airlie House, 6809 Airlie Road, Warrenton, VA 20187.

Contact Person: Claire Rodgaard, Assistant to the Scientific Director, Division of Intramural Research, Office of the Director, National Human Genome Research Institute, 45 Convent Drive, Building 49, Room 4A06, Bethesda, MD 20892, 301 435–5802.

(Catalogue of Federal Domestic Assistance Program Nos. 93.172, Human Genome Research, National Institutes of Health, HHS)

Dated: October 16, 2000.

LaVerne Y. Stringfield,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 00–27354 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Arthritis and Musculoskeletal and Skin Diseases; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C Appendix 2), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Arthritis and Musculoskeletal and Skin Diseases Special Emphasis Panel.

Date: November 8, 2000.

Time: 8:30 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Bethesda Marriot, 5151 Pooks Hill Road, Bethesda, MD 20814.

Contact Person: Aftab A. Ansari, PhD, National Institutes of Health, NIAMS, Natcher Building, 45 Center Drive, Room 5AS25N, Bethesda MD 20892, 301–594–4952.

Name of Committee: National Institute of Arthritis and Musculoskeletal and Skin Diseases Special Emphasis Panel.

Date: November 9–10, 2000.

Time: 8:30 a.m. to 3 p.m.

Agenda: To review and evaluate grant applications.

Place: Bethesda Marriot, 5151 Pooks Hill Road, Bethesda, MD 20814.

Contact Person: Aftab A. Ansari, Phd, National Institutes of Health, NIAMS, Natcher Building, 45 Center Drive, Room 5AS25N, Bethesda, MD 20892, 301–594–4952.

Name of Committee: National Institute of Arthritis and Musculoskeletal and Skin Diseases Special Emphasis Panel.

Date: November 30, 2000.

Time: 10:30 a.m. to 4 p.m.

Agenda: To review and evaluate grant applications.

Place: Hyatt Regency, One Metro Center, Bethesda, MD 20814.

Contact Person: Aftab A. Ansari, Phd, National Institutes of Health, NIAMS, Natcher Building, 45 Center Drive, Room 5AS25N, Bethesda, MD 20892, 301–594–4952.

Name of Committee: National Institute of Arthritis and Musculoskeletal and Skin Diseases Special Emphasis Panel.

Date: December 13, 2000.

Time: 8:30 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Holiday Inn—Chevy Chase, Palladian East and Center Rooms, 5520 Wisconsin Avenue, Chevy Chase, MD 20815.

Contact Person: Tracy A. Shahan, Phd, Scientific Review Administrator, National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases, Bldg. 45/Room 5as–25h, Bethesda, MD 20892, (301) 594–4952.

(Catalogue of Federal Domestic Assistance Program Nos. 93.846, Arthritis, Musculoskeletal and Skin Diseases Research, National Institutes of Health, HHS)

Dated: October 16, 2000.

LaVerne Stringfield,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 00–27351 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Mental Health; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Mental Health Special Emphasis Panel.

Date: November 14, 2000.

Time: 11 am to 12:30 pm.

Agenda: To review and evaluate grant applications.

Place: Neuroscience Center, National Institutes of Health, 6001 Executive Blvd., Bethesda, MD 20892 (Telephone Conference Call).

Contact Person: Houmam H Araj, PhD, Scientific Review Administrator, Division of Extramural Activities, National Institute of Mental Health, NIH, 6001 Executive Blvd., Room 6150, MSC 9608, Bethesda, MD 20892–9608, 301–443–1340.

Name of Committee: National Institute of Mental Health Special Emphasis Panel.

Date: November 16, 2000.

Time: 3 pm to 5 pm.

Agenda: To review and evaluate grant applications.

Place: Neuroscience Center, National Institutes of Health, 6001 Executive Blvd., Bethesda, MD 20892 (Telephone Conference Call).

Contact Person: Mary Sue Krause, MEDS, Scientific Review Administrator, Division of Extramural Activities, National Institute of Mental Health, NIH, Neuroscience Center, 6001 Executive Blvd., Room 6138, Bethesda, MD 20892–9606, 301–443–6470.

Name of Committee: National Institute of Mental Health Special Emphasis Panel.

Date: November 21, 2000.

Time: 3 pm to 5 pm.

Agenda: To review and evaluate grant applications.

Place: Neuroscience Center, National Institutes of Health, 6001 Executive Blvd., Bethesda, MD 20892 (Telephone Conference Call).

Contact Person: Houmam H Araj, PhD, Scientific Review Administrator, Division of Extramural Activities, National Institute of Mental Health, NIH, 6001 Executive Blvd., Room 6150, MSC 9608, Bethesda, MD 20892–9608, 301–443–1340.

Name of Committee: National Institute of Mental Health Special Emphasis Panel.

Date: November 30–December 1, 2000.

Time: 8 am to 6 pm.

Agenda: To review and evaluate grant applications.

Place: Bethesda Marriott Hotel, 5151 Pooks Hill Road, Bethesda, MD 20814.

Contact Person: Houmam H Araj, PhD, Scientific Review Administrator, Division of Extramural Activities, National Institute of Mental Health, NIH, 6001 Executive Blvd., Room 6150, MSC 9608, Bethesda, MD 20892–9608, 301–443–1340.

Name of Committee: National Institute of Mental Health Special Emphasis Panel.

Date: December 4, 2000.

Time: 8:30 am to 5 pm.

Agenda: To review and evaluate grant applications.

Place: Bethesda Holiday Inn, 8120 Wisconsin Avenue, Bethesda, MD 20814.

Contact Person: Henry J. Haigler, PhD, Scientific Review Administrator, Division of Extramural Activities, National Institute of Mental Health, NIH, Neuroscience Center, 6001 Executive Blvd., Room 6150, MSC 9608, Bethesda, MD 20892–9608, 301/443–7216.

(Catalog of Federal Domestic Assistance Program Nos. 93.242, Mental Health Research Grants; 93.281, Scientist Development Award, Scientist Development Award for Clinicians, and Research Scientist Award; 93.282, Mental Health National Research Service Awards for Research Training, National Institutes of Health, HHS)

Dated: October 16, 2000.

LaVerne Y. Stringfield,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 00–27352 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Notice of Meeting; Chairpersons, Boards of Scientific Counselors for Institutes and Centers at the National Institutes of Health

Notice is hereby given of a meeting scheduled by the Deputy Director for Intramural Research at the National Institutes of Health (NIH) with the Chairpersons of the Boards of Scientific Counselors. The Boards of Scientific Counselors form an advisory group to the Scientific Directors of the intramural research programs at the NIH. This meeting will take place from 10 a.m. to 3 p.m. on Monday, November 13, 2000, in the Medical Board Room of Building 10 at the NIH, 10 Center Drive, Bethesda, MD. The meeting will include a discussion of policies and procedures that apply to the regular review of NIH intramural scientists and their work, with special emphasis on clinical research.

Individuals who plan to attend and need special assistance, such as sign language interpretation or other reasonable accommodations, should contact Ms. Colleen Crone at the Office of Intramural Research, NIH, Building 1, Room 114, telephone (301) 496–1921 or fax (301) 402–4273 in advance of the meeting.

Dated: October 13, 2000.

Ruth L. Kirschstein,

Principal Deputy Director, National Institutes of Health.

[FR Doc. 00–27349 Filed 10–24–00; 8:45 am]

BILLING CODE 4140–01–M

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–4561–N–66]

Notice of Submission of Proposed Information Collection to OMB; Restrictions on Assistance to Noncitizens

AGENCY: Office of the Chief Information Officer, HUD.

ACTION: Notice.

SUMMARY: The proposed information collection requirement described below has been submitted to the Office of Management and Budget (OMB) for review, as required by the Paperwork Reduction Act. The Department is soliciting public comments on the subject proposal.

DATES: *Comments Due Date:* November 24, 2000.

ADDRESSES: Interested persons are invited to submit comments regarding this proposal. Comments should refer to the proposal by name and/or OMB approval number (2501–0014) and should be sent to: Joseph F. Lackey, Jr., OMB Desk Officer, Office of Management and Budget, Room 10235, New Executive Office Building, Washington, DC 20503.

FOR FURTHER INFORMATION CONTACT: Wayne Eddins, Reports Management Officer, Q, Department of Housing and Urban Development, 451 Seventh Street, Southwest, Washington, DC 20410; e-mail Wayne_Eddins@HUD.gov; telephone (202) 708–2374. This is not a toll-free number. Copies of the proposed forms and other available documents submitted to OMB may be obtained from Mr. Eddins.

SUPPLEMENTARY INFORMATION: The Department has submitted the proposal for the collection of information, as described below, to OMB for review, as required by the Paperwork Reduction Act (44 U.S.C. Chapter 35). The Notice lists the following information: (1) The title of the information collection proposal; (2) the office of the agency to collect the information; (3) the OMB approval number, if applicable; (4) the description of the need for the information and its proposed use; (5) the agency form number, if applicable; (6) what members of the public will be affected by the proposal; (7) how frequently information submissions will be required; (8) an estimate of the total number of hours needed to prepare the information submission including number of respondents, frequency of response, and hours of response; (9) whether the proposal is new, and extension, reinstatement, or revision of an information collection requirement; and (10) the name and telephone number of an agency official familiar with the proposal and of the OMB Desk Officer for the Department.

This Notice also lists the following information:

Title of Proposal: Restrictions on Assistance to.

OMB Approval Number: 2501–0014.

Form Numbers: None.

Description of the Need For The Information and Its Proposed Use: Section 214 of the Housing and Community Development Act of 1980 prohibits HUD from making housing assistance under certain programs available to persons who are not U.S. citizens, nationals, or eligible noncitizens.

Respondents: Individuals or households, business or Other for-profit, State, Local or Tribal Government.

Frequency of Submission: On Occasion.

REPORTING BURDEN

Number of respondents	×	Frequency of response	×	Hour per response	=	Burden hours
3,030,547		3.6		.34		365,858

Total Estimated Burden Hours: 365,858.

Status: Reinstatement, without change.

Authority: Section 3507 of the Paperwork Reduction Act of 1995, 44 U.S.C. 35, amended.

Dated: October 18, 2000.

Wayne Eddins,

Departmental Reports Management Officer, Office of the Chief Information Officer.

[FR Doc. 00–27310 Filed 10–24–00; 8:45 am]

BILLING CODE 4210–01–M

DEPARTMENT OF THE INTERIOR

Office of the Assistant Secretary, Water and Science; Central Utah Project Completion Act; Notice of Intent to Negotiate a Contract among the Central Utah Water Conservancy District, Heber Light and Power, and the Department of the Interior for Non-Federal Hydroelectric Power Development at Jordanelle Dam, Central Utah Project, Utah

AGENCY: Office of the Assistant Secretary—Water and Science, Department of the Interior.

ACTION: Notice of intent to negotiate a contract among the Central Utah Water Conservancy District (District), Heber Light & Power (HL&P), and the Department of the Interior (Interior) for non-federal hydroelectric power development at Jordanelle Dam, Bonneville Unit, Central Utah Project (CUP), Utah.

SUMMARY: The CUP's Bonneville Unit, located in northern Utah, was authorized for construction, including hydroelectric power, by the Colorado River Storage Project (CRSP) Act of April 11, 1956 (ch. 203, 70 Stat. 105)(CRSPA). The United States constructed Jordanelle Dam under the CRSPA. The Central Utah Project Completion Act (CUPCA), comprised of Titles II–VI of the Act of October 30, 1992 (106 Stat. 4600, Pub. Law 102–575) authorized the construction of other features of the Bonneville Unit. Section 208 of the CUPCA provides that power generation facilities associated with the CUP be developed and operated in accordance with the CRSPA, which explicitly embodies all Reclamation law except as otherwise provided in the CRSPA.

In accordance with a **Federal Register** notice published July 2, 1999 (Volume 64, Number 127, Pages 36030—36032), Interior, in consultation with the Western Area Power Administration, selected the joint proposal of the District/HL&P to develop non-federal hydroelectric power at Jordanelle Dam through a lease of power privilege. A lease of power privilege is an alternative to federal hydroelectric power development. A lease of power privilege grants to a non-federal entity the right to utilize, consistent with CUP purposes, water power head or storage at and/or operationally in conjunction with the CUP, for non-federal electric power generation and sale by the entity. The general authority for lease of power privilege under Reclamation law includes, among others, the Town Sites and Power Development Act of 1906 (43 U.S.C. § 522) and the Reclamation Project Act of 1939 (43 U.S.C. § 485h(c)) (1939 Act).

Negotiation Meeting: Interior will hold a public negotiation meeting to negotiate a contract for the lease of power privilege at Jordanelle Dam among the District, HL&P, and Interior. The meeting will be held: Friday, November 17, 2000, 10 a.m., Central Utah Water Conservancy District, 355 West University Parkway, Orem, Utah.

The time and location of the meeting will also be announced in local media.

FOR FURTHER INFORMATION CONTACT: Additional information on matters related to this **Federal Register** notice can be obtained at the address and telephone number set forth below:

Mr. Reed Murray, CUP Completion Act Office, Department of the Interior, 302 East 1860 South, Provo UT 84606–6154, (801) 379–1237, rmurray@uc.usbr.gov

Dated: October 10, 2000.

Ronald Johnston,

CUP Program Director, Department of the Interior.

[FR Doc. 00–27377 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–RK–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[OR–104–1430–DE: GPO–0013]

Final Environmental Impact Statement (FEIS)—North Bank Habitat Management Area (NBHMA)

AGENCY: Bureau of Land Management, Department of the Interior.

ACTION: Extension of public review.

SUMMARY: Notice is given that the Bureau of Land Management (BLM), Roseburg District, has extended the period for public review of the North Bank Habitat Management Area FEIS. The FEIS describes and analyzes the environmental impacts of management on the 6,580 acre North Bank Habitat Management Area. This notice was originally published in the **Federal Register** on September 26, 2000 (page 57825).

DATES: A thirty day (30) day public review period for this document was provided commencing on September 22, 2000. The public review period will be extended an additional fifteen (15) days until November 6, 2000.

ADDRESSES: Request for copies should be addressed to the Field Manager, Swiftwater Field Office, Roseburg District, Bureau of Land Management, 777 NW Garden Valley Blvd., Roseburg, Oregon 97470; Attention NBHMA Project.

FOR FURTHER INFORMATION CONTACT: Ralph Klein (Team Lead) 541–440–4930.

SUPPLEMENTARY INFORMATION: (1) The EIS was written in cooperation with the Oregon Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. (2) The EIS is available on the Roseburg District web site (www.or.blm.gov/roseburg).

Dated: October 19, 2000.

Jay K. Carlson,

Field Manager.

[FR Doc. 00–27375 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–33–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[OR–958–1430–EU: GP01–0014; OR 51858]

Notice of Realty Action, Exchange of Public Lands

AGENCY: Bureau of Land Management, Interior.

SUMMARY: The Oregon Land Exchange Act of 2000 (OLEA), Pub. L. 106–257, requires the Bureau of Land Management (BLM) to exchange certain described public lands within 90 days after reaching agreement with Clearwater Land Exchange on the final appraised values. In the Northeast Oregon Assembled Land Exchange (NOALE) Final Environmental Impact Statement, dated June 29, 1998, the BLM examined these public lands and found them suitable for exchange under section 206 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1716), as amended.

The first transaction of the OLEA involves the exchange of approximately 35,055 acres of Federal land for approximately 35,712 acres of private lands. There will be at least one additional exchange, and likely a third and final transaction in order to fully carry out the requirements of the OLEA.

ACTION: 1. The BLM will exchange the following described public lands under the authority of the Oregon Land Exchange Act of 2000, subject to valid existing rights

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Willamette Meridian

T. 3 S., R. 32 E.,
Sec. 02, W½SE¼.
T. 4 S., R. 28 E.,
Sec. 01, SE¼NE¼ and N½SE¼;
Sec.15, NE¼NE¼.
T. 4 S., R. 29 E.,
Sec. 03, NE¼SE¼.
T. 4 S., R. 30 E.,
Sec. 01, lot 2;
Sec. 02, lot 4;
Sec. 10, SE¼SW¼ and NW¼SE¼;
Sec. 13, N½NW¼.
T. 4 S., R. 31 E.,
Sec. 12, SW¼NE¼ and SW¼NW¼;
Sec. 19, lot 4;
Sec. 23, SE¼SE¼;
Sec. 30, lots 1, 2, and 3, and SE¼NW¼ and E½SW¼.
T. 4 S., R. 32 E.,
Sec. 18, N½NE¼.
T. 5 S., R. 27 E.,
Sec. 03, NW¼SW¼;
Sec. 17, NE¼SE¼.
T. 5 S., R. 31 E.,
Sec. 17, N½SE¼;
Sec. 18, lots 2 and 3;
Sec. 21, SW¼NW¼.
T. 5 S., R. 33 E.,
Sec. 21, SW¼NW¼.
T. 6 S., R. 23 E.,
Sec. 23, NE¼SW¼.
T. 6 S., R. 25 E.,
Sec. 01, lot 1;
Sec. 06, lot 4;
Sec. 07, NE¼SE¼;
Sec. 08, NW¼SW¼;
Sec. 10, E½SW¼ and S½SE¼;
Sec. 15, N½NE¼ and NE¼NW¼;
Sec. 19, lot 3.
T. 6 S., R. 33 E.,
Sec. 6, lot 5.
T. 7. S, R. 22 E.,
Sec. 12, lot 3 and NW¼NE¼;
Sec. 14, NW¼SE¼;
Sec. 20, SW¼NE¼;
Sec. 23, NW¼SW¼;
Sec. 25, NE¼NE¼ and S½NW¼;
Sec. 26, S½NE¼ and SE¼SE¼;
Sec. 34, NE¼SW¼.
T. 7 S., R. 29 E.,
Sec. 14, S½NW¼;
Sec. 15, SE¼NE¼;
Sec. 17, NW¼SE¼.
T. 7 S., R. 30 E.,
Sec. 15, NW¼NE¼;
Sec. 23, SE¼SW¼ and NE¼SE¼;
Sec. 24, NE¼NE¼.
T. 8 S., R. 21 E.,
Sec. 05, lot 1;
Sec. 14, lot 5.
T. 8 S., R. 22 E.,
Sec. 01, lots 1, 3 and 5;
Sec. 04, SE¼NW¼;
Sec. 06, SE¼SW¼;
Sec. 07, lot 6 and NE¼NW¼;
Sec. 10, lot 4;
Sec. 11, SE¼SW¼;
Sec. 24, lots 3 and 4, and W½E½;
Sec. 25, lots 1–4, and W½NE¼ and NW¼SE¼;
Sec. 26, lots 1 and 2, NW¼SE¼ and S½SE¼;
Sec. 34, NE¼SE¼;
Sec. 35, N½NE¼.
T. 8 S., R. 23 E.,
Sec. 09, S½SW¼;
Sec. 19, E½SW¼ and SW¼SE¼;
Sec. 30, lots 2 and 3, and SE¼SW¼.
T. 8 S., R. 27 E.,
Sec. 14, N½NW¼;
Sec. 15, N½NE¼ and W½SW¼;
Sec. 25, NW¼SE¼;
Sec. 29, N½SW¼;
Sec. 32, W½SW¼;
Sec. 35, SE¼SW¼.
T. 8 S., R. 28 E.,
Sec. 11, S½NE¼, E½SW¼, NE¼SE¼, W½SE¼, and N½SE¼SE¼;
Sec. 12, S½NE¼, S½NW¼, N½SW¼, and N½SW¼SW¼;
Sec. 14, NW¼NE¼, NE¼NW¼, NW¼SW¼ and NW¼SE¼;
Sec. 15, E½SW¼;
Sec. 22, SW¼NW¼ and NE¼SE¼;
Sec. 23, SW¼SW¼;
Sec. 26, SW¼SE¼;
Sec. 27, SW¼SE¼;
Sec. 31, lots 9 and 10.
T. 8 S., R. 29 E.,
Sec. 05, SW¼NW¼;
Sec. 07, lots 7–9, 16–19, 21 and 22;
Sec. 09, SW¼NW¼;
Sec. 18, lot 15;
Sec. 22, SW¼SE¼;
Sec. 27, NE¼, E½NW¼ and NW¼SE¼.
T. 8 S., R. 30 E.,

Sec. 12, SE¼NW¼;
Sec. 14, NE¼NE¼;
Sec. 20, SW¼NW¼;
Sec. 24, S½SW¼.
T. 8 S., R. 31 E.,
Sec. 23, NE¼NW¼;
Sec. 32, NE¼NW¼ and NW¼SW¼.
T. 9 S., R. 26 E.,
Sec. 01, lots 1 and 2, and S½NE¼ and NE¼SE¼;
Sec. 03, lots 3 and 4, and SW¼NE¼ and S½NW¼;
Sec. 04, S½SW¼;
Sec. 10, E½ and E½SW¼;
Sec. 11, SW¼NE¼ and SW¼;
Sec. 14, N½NW¼, NW¼SW¼ and NE¼SE¼;
Sec. 15, NE¼NE¼;
Sec. 22, SW¼SW¼;
Sec. 27, SE¼SE¼.
T. 9 S., R. 27 E.,
Sec. 03, lots 2 and 3;
Sec. 04, lot 1;
Sec. 05, lot 1 and SE¼NE¼ and W½SW¼;
Sec. 06, lots 4–6, inclusive, and SW¼NE¼, SE¼NW¼, NE¼SW¼ and NW¼SE¼;
Sec. 11, W½SE¼;
Sec. 14, NW¼NE¼;
Sec. 18, S½NE¼, N½SE¼ and SE¼SE¼;
Sec. 19, NE¼NE¼, S½NE¼, N½SE¼ and SW¼SE¼;
Sec. 23, E½SW¼ and E½SE;
Sec. 24, NW¼NE¼, S½NE¼, NW¼NW¼, S½NW¼ and S½;
Sec. 25, N½NE¼, SW¼NE¼, NE¼NW¼ and S½SE¼;
Sec. 26, NE¼NE¼, SE¼SW¼ and NW¼SE¼;
Sec. 29, S½NE¼, N½SE¼ and SW¼SE¼;
Sec. 30, NW¼NE¼ and SE¼NE¼;
Sec. 32, N½NE¼ and NE¼NW¼;
Sec. 34, E½E½;
Sec. 35, W½NW¼, SW¼ and SW¼SE¼.
T. 9 S., R. 28 E.,
Sec. 04, SW¼NE¼;
Sec. 05, lot 8;
Sec. 06, lots 1, 2, 3, 6 and 7, and SW¼NE¼, NE¼SW¼ and NW¼SE¼;
Sec. 07, W½NE¼ and NE¼NW¼;
Sec. 08, SW¼SW¼;
Sec. 09, SE¼SW¼;
Sec. 17, SW¼NE¼ and S½NW¼;
Sec. 18, SE¼SE¼;
Sec. 20, SW¼NE¼, N½SW¼ and SE¼NW¼;
Sec. 22, N½NE¼ and SE¼NE¼;
Sec. 27, SW¼NE¼ and S½NW¼;
Sec. 28, S½NE¼ and SE¼NW¼;
Sec. 29, W½, N½SE¼ and SW¼SE¼;
Sec 30, SE¼NE¼ and E½SE¼;
Sec. 31, lot 1, and N½NE¼, SE¼NE¼, NE¼NW¼ and NE¼SE¼;
Sec. 34, NW¼NE¼ and SE¼NE¼.
T. 9 S., R. 29 E.,
Sec. 21, SE¼NE¼;
Sec. 30, N½SE¼;
Sec. 31, lot 3, and SW¼NE¼ and E½NW¼.
T. 9 S., R. 31 E.,
Sec. 08, NW¼SE¼;
Sec. 15, SE¼SE¼;
Sec. 23, NE¼NW¼.
T. 9 S., R. 32 E.,
Sec. 04, lot 1;
Sec. 05, lot 1 and 2;
Sec. 18, SE¼SW¼ and SW¼SE¼;
Sec. 22, NW¼SW¼;
Sec. 27, SE¼SW¼.
T. 10 S., R. 27 E.,
Sec. 01, lot 1 and SE¼NE¼;
Sec. 03, SE¼NE¼;
Sec. 05, NE¼SW¼ and NW¼SE¼;
Sec. 10, W½NW¼, NW¼SW¼ and SE¼SW¼;
Sec. 14, NE¼NE¼;
Sec. 15, W½NW¼ and NW¼SW¼;
Sec. 22, S½SW¼;
Sec. 26, NW¼SW¼;
Sec. 27, NE¼SE¼.
T. 10 S., R. 28 E.,
Sec. 07, NE¼SW¼ and NW¼SE¼;
Sec. 16, SW¼NE¼, NE¼SW¼, SW¼SW¼ and NW¼SE¼;
Sec. 22, SE¼SW¼;
Sec. 23, NE¼NW¼, NE¼SW¼ and SW¼SW¼;
Sec. 26, NW¼NW¼ and SE¼SW¼;
Sec. 27, NW¼NE¼ and N½NW¼;
Sec. 33, NW¼SE¼.
T. 10 S., R. 29 E.,
Sec. 01, SE¼NE¼;
Sec. 13, SW¼NW¼;
Sec. 14, SE¼NE¼;
Sec. 30, lot 2.
T. 10 S., R. 30 E.,
Sec. 21, SW¼NW¼;
Sec. 32, NE¼NW¼.
T. 10 S., R. 31 E.,
Sec. 21, NW¼NE¼;
Sec. 29, W½SW¼;
Sec. 30, lot 2.
T. 11. S, R. 27 E.,
Sec. 11, N½NE¼.
T. 11 S., R. 28 E.,
Sec. 05, SE¼SW¼;
Sec. 06, lot 1 and SE¼NE¼;
Sec. 17, SW¼SW¼;
Sec. 20, W½NW¼;
Sec. 21, NE¼NE¼.
T. 11 S., R. 29 E.,
Sec. 29, SW¼ and SW¼SE¼;
Sec. 30, lot 3 and NW¼NE¼;
Sec. 32, NW¼NE¼ and NE¼NW¼.
T. 12 S., R. 27 E.,
Sec. 06, lot 10;
Sec. 15, NE¼NE¼;
Sec. 20, N½, N½S½, S½SW¼ and SW¼SE¼;
Sec. 26, W½ and W½E½;
Sec. 28, W½NE¼ and W½;
Sec. 34, All.
T. 12 S., R. 29 E.,
Sec. 28, E½NW¼;
Sec. 34, W½SW¼.
T. 12 S., R. 30 E.,
Sec. 24, SE¼NE¼, W½, W½E½, and NE¼SE¼;
Sec. 25, NW¼NW¼.
T. 12 S., R. 31 E.,
Sec. 26, SW¼SE¼;
Sec. 30, SE¼NE¼ and E½SE¼.
T. 12 S., R. 32 E.,
Sec. 32, NW¼SW¼.
T. 13 S., R. 27 E.,
Sec. 02, Four unnumbered lots in the N½N½, S½N½ and SE¼;
Sec. 12, SE¼NE¼ and NE¼SE¼.
T. 13 S., R. 28 E.,
Sec. 14, N½;
Sec. 17, SE¼;
Sec. 18, lots 3 and 4;
Sec. 19, lot 1, and E½NE¼;
Sec. 20, N½NE¼, SW¼NE¼, N½NW¼ and SW¼NW¼;
Sec. 22, S½SE¼;
Sec. 24, NE¼SE¼ and SW¼SE¼;
Sec. 29, SW¼SE¼;
Sec. 34, NW¼NE¼.
T. 13 S., R. 29 E.,
Sec. 06, lots 3–7, inclusive, and SE¼NW¼;
Sec. 08, All;
Sec. 24, NE¼ and W½NW¼;
Sec. 28, W½SW¼.
T. 13 S., R. 30 E.,
Sec. 04, SE¼SE¼;
Sec. 06, lots 1–4, inclusive;
Sec. 14, NW¼NE¼, NE¼NW¼ and S½SE¼;
Sec. 18, lots 1 and 2, and NE¼, E½NW¼ and SE¼.
T. 13 S., R. 31 E.,
Sec. 04, lots 1 and 2, and S½NE¼, NE¼SW¼ and SE¼;
Sec. 28, S½SW¼.
T. 13 S., R. 32 E.,
Sec. 08, SE¼SE¼;
Sec. 20, NE¼ and N½SW¼;
T. 13 S., R. 33 E.,
Sec. 04, lots 3 and 4, and S½NW¼ and SW¼;
Sec. 06, lot 2 and SW¼NE¼ and W½SE¼;
Sec. 22, NE¼NE¼.
T. 14 S., R. 30 E.,
Sec. 03, NW¼SW¼;
Sec. 07, E½NE¼;
Sec. 11, NW¼SE¼.
T. 14 S., R 31 E.,
Sec. 03, lots 3 and 4;
Sec. 05, lots 3 and 4, and NE¼SW¼.
T. 16 S., R. 30 E.,
Sec. 01, lot 2.
T. 17 S., R. 26 E.,
Sec. 13, NE¼NE¼, SE¼NW¼ and W½SE¼;
Sec. 17, NW¼NE¼;
Sec. 20, NW¼SW¼;
Sec. 22, SE¼NW¼;
Sec. 29, SE¼NE¼, W½NW¼ and N½SE¼;
Sec. 30, SE¼NE¼, SW¼SE¼ and E½SE¼;
Sec. 31, W½NE¼, NW¼SE¼ and SE¼SE¼;
Sec. 32, NW¼NE¼, SW¼SW¼ and NW¼SE¼.
T. 17 S., R. 27 E.,
Sec. 01, NW¼SW¼;
Sec. 02, NE¼SE¼ and S½S½;
Sec. 08, NE¼NE¼ and W½E½;
Sec. 09, N½NE¼, SE¼NE¼, NW¼NW¼, E½SW¼, W½SE¼ and SE¼SE¼;
Sec. 10, W½NE¼, NE¼NE¼ and S½SE¼;
Sec. 11, NW¼NW¼;
Sec. 12, N½SE¼ and SW¼SE¼;
Sec. 13, NW¼NE¼;
Sec. 15, E½NE¼, NW¼NW¼, S½NW¼, SW¼ and NE¼SE¼;
Sec. 17, NW¼NE¼;
Sec. 18, lot 3;
Sec. 21, W½E½;
Sec. 26, NE¼SW¼;
Sec. 27, SW¼;
Sec. 28, E½ and SE¼SW¼;

Sec. 29, E½NE¼ and SW¼SE¼;
Sec. 30, lots 2, 3 and 4;
Sec. 31, lots 1–4, inclusive;
Sec. 33, N½, W½SW¼ and SE¼;
Sec. 34, W½ and S½SE¼.
T. 17 S., R. 29 E.,
Sec. 19, SE¼NE¼.
T. 18 S., R. 26 E.,
Sec. 04, NE¼SW¼;
Sec. 05, lot 4;
Sec. 08, NE¼SW¼ and SW¼SW¼;
Sec. 17, W½NW¼;
Sec. 19, NE¼SE¼;
Sec. 26, SE¼NE¼;
Sec. 28, NW¼NE¼ and E½NW¼.
T. 18 S., R. 27 E.,
Sec. 02, SW¼SW¼;
Sec. 03, lots 3 and 4, S½NW¼ and SW¼;
Sec. 04, lots 1-4, inclusive, and NE¼SE¼;
Sec. 05, lots 3 and 4, and S½SE¼;
Sec. 06, SE¼SE¼;
Sec. 08, NE¼ and N½S½;
Sec. 09, SE¼NE¼ and SW¼NW¼;
Sec. 10, N½NW¼, SW¼NW¼ and NW¼SE¼;
Sec. 11, S½NE¼;
Sec. 12, S½N½.
T. 18 S., R. 28 E.,
Sec. 05, lot 1, S½N½ and NW¼SW¼;
Sec. 06, lots 1–7, inclusive, and S½NE¼, SE¼NW¼ and NE¼SW¼;
Sec. 07, S½NE¼ and N½SE¼;
Sec. 08, NW¼NE¼, N½NW¼, S½N½ and N½S½;
Sec. 09, S½NW¼, NW¼SW¼ and E½SE¼;
Sec. 10, W½SW¼ and SE¼SW¼;
Sec. 11, SE¼NE¼, S½SW¼ and NE¼SE¼;
Sec. 14, SW¼SW¼;
Sec. 17, NE¼, NE¼NW¼, S½NW¼, SW¼, N½SE¼ and SW¼SE¼;
Sec. 21, NE¼NE¼ and SE¼SE¼;
Sec. 22, S½SW¼;
Sec. 23, NW¼NW¼;
Sec. 27, E½;
Sec. 28, SW¼NE¼, W½SE¼ and SE¼SE¼;
Sec. 33, E½E½.
T. 18 S., R. 29 E.,
Sec. 18, NE¼SW¼;
Sec. 19, lot 3.

The above described land aggregates approximately 35,055 acres, more or less, in the counties of Grant, Morrow, Umatilla and Wheeler, Oregon.

2. In exchange, the BLM will acquire the following described private lands under the authority of the Oregon Land Exchange Act of 2000, subject to valid existing rights:

Willamette Meridian

T. 06 S., R. 28 E.,
Sec 36, E½W½, E½ and SW¼SW¼.
T. 06 S., R. 29 E.,
Sec 31, lots 2–4, 7, 9, 10–11, 14–16, and W½NE¼, SE¼NE¼ and SE¼;
Sec 32, SW¼;
Sec 36, All.
T. 06 S., R. 30 E.,
Sec 06, lots 1–3, inclusive, and SE¼NW¼, S½NE¼, E½SW¼ and SE¼;
Sec 07, lots 1–4, inclusive, and E½ and E½W½;
Sec 18, lots 1–4, inclusive, and E½ and E½W½;
Sec 19, lots 2, 3, 4 and NE¼, E½NW¼, E½SW¼ and SE¼;
Sec 23, S½NE¼, S½NW¼, N½SW¼ and SE¼;
Sec 24, NE¼, NE¼NW¼, S½NW¼ and S½;
Sec 25, N½, N½SW¼ and NW¼SE¼;
Sec 26, NE¼, NE¼SW¼, S½SW¼ and SE¼;
Sec 27, NE¼SW¼, S½SW¼ and SE¼;
Sec 28, SE¼NW¼ and SW¼;
Sec 30, lots 1–4, inclusive, and E½ and E½W½;
Sec 31, lots 1–4, inclusive, E½ and E½W½;
Sec 32, N½, W½SW¼, NE¼SW¼ and SE¼;
Sec 33, N½NE¼, SE¼NE¼, W½ and SE¼;
Sec 34, E½, W½SW¼ and SE¼SW¼;
Sec 35, NW¼NE¼, S½NE¼, NW¼, SE¼SW¼, NE¼SE¼, W½NW¼SE¼ and SW¼SE¼;
Sec 36, E½ and NW¼.
T. 06 S., R. 31 E.,
Sec 18, SW¼NE¼, NE¼NW¼, E½SW¼ and SW¼SE¼;
Sec 19, lots 1–3, inclusive, and SW¼NE¼, E½NW¼, NE¼SW¼, and NW¼SE¼;
Sec 29, S½SE¼; Excepting therefrom that tract of land conveyed to Blanche Irene Halstead by deed recorded in Book 322, Page 197, Deed Records;
Sec 30, SE¼SW¼ and SW¼SE¼;
Sec 31, lot 2, W½NE¼, SE¼NE¼, E½NW¼, E½SW¼ and SE¼;
Sec 32, NW¼NE¼, S½NE¼, SE¼NW¼, N½SW¼, SE¼SW¼ and SE¼;
Sec 33, W½SW¼ and SE¼SW¼.
T. 07 S., R. 28 E.,
Sec 01, lots 1–4, inclusive, and NW¼SW¼, S½SW¼ and SE¼;
Sec 07, SE¼NE¼, E½SE¼ and SW¼SE¼;
Sec 08, N½, NE¼SW¼, S½SW¼ and SE¼;
Sec 09, All;
Sec 10, W½NE¼, W½, NW¼SE¼, W½E½SE¼, E½E½SE¼; and a parcel of land in the E½NE¼ described as follows: Beginning at the NW corner of the E½NE¼ of said sec. 10; thence South 2640.0 feet, more or less, to the SW corner of said E½NE¼; thence East 1320.0 feet, more or less, to the SE corner of said E½NE¼; thence Northwesterly, on a straight line, to the place of beginning;
Sec 11, SE¼NE¼, SE¼SW¼, S½SE¼, and a parcel of land in the W½SW¼ described as follows: Beginning at the NW corner of the W½SW¼ of said sec. 11; thence South 2640.0 feet, more or less, to the SW corner of said W½SW¼; thence East 1320.0 feet, more or less, to the SE corner of said W½SW¼; thence Northwesterly, on a straight line to the place of beginning;
Sec 12, W½NE¼, SE¼NE¼, E½NW¼, SW¼NW¼ and S½;
Sec 13, NE¼, NE¼NW¼, S½NW¼ and S½;
Sec 14, NE¼NE¼, S½NE¼, SE¼ and W½;
Sec 15, N½, SW¼, N½SE¼ and SW¼SE¼;
Sec 16, All;
Sec 17, NE¼NE¼, W½E½, W½NW¼ and SW¼;
Sec 18, lots1–12, inclusive, and E½; SAVE & EXCEPT that portion lying southerly and westerly of the centerline of Little Wall Creek;
Sec 19, lots 1, 2, 5, 6, 7, 8, and 12, and E½: SAVE & EXCEPT that portion lying westerly of the centerline of Little Wall Creek;
Sec 20, All;
Sec 21, All;
Sec 22, E½ and NW¼;
Sec 23, All;
Sec 24, All;
Sec 25, N½NE¼, NW¼, NW¼SW¼, S½SW¼ and SW¼SE¼;
Sec 26, S½NE¼, SW¼NW¼, S½ and N½N½;
Sec 27, E½;
Sec 28, N½N½;
Sec 29, N½, NW¼SW¼, E½SW¼ and SE¼;
Sec 30, lots 1 and 6, and NE¼ and N½SE¼: SAVE & EXCEPT that portion lying westerly of the centerline of Little Wall Creek;
Sec 33, S½SE¼;
Sec 34, N½NE¼;
Sec 35, N½NE¼ and NW¼NW¼.
T. 07 S., R. 29 E.,
Sec 01, lots 1–4, inclusive, and SW¼NW¼, NW¼SW¼, SE¼SW¼ and SE¼;
Sec 02, lots 1–4, inclusive, and S½N½, E½SE¼ and SW¼SE¼;
Sec 03, lots 1–3, inclusive, and SE¼NW¼, S½NE¼ and SE¼;
Sec 04, S½SE¼;
Sec 06, lots 2–14,16–25, and SW¼NE¼;
Sec 07, lots 3–10, 16, 17, 18, 19, and 20;
Sec 08, S½N½ and N½S½;
Sec 09, N½NW¼, SE¼NW¼, NE¼ and NW¼SW¼;
Sec 10, N½, NE¼SW¼ and NE¼SE¼;
Sec 11, N½ and N½S½;
Sec 12, NE¼NW¼;
Sec 19, lots 7, 8, 9, 17, 18, 19, 20, and 21.
T. 07 S., R. 30 E.,
Sec 01, lots 1–3, inclusive, and, S½N½, N½S½ and SW¼SW¼;
Sec 02, lots 3 and 4, S½NW¼, SW¼, SE¼NE¼ and SE¼;
Sec 03, S½NE¼, NE¼SW¼, S½SW¼ and SE¼;
Sec 04, lots 3 and 4, S½NW¼, S½NE¼, S½SW¼ and SE¼;
Sec 05, lots 1, 3, and 4, and S½NW¼, S½NE¼, SW¼ and W½SE¼;
Sec 06, lots 1–7, inclusive, and SE¼NW¼, E½SW¼, S½NE¼ and SE¼;
Sec 07, lot 1 and NE¼NW¼ and NE¼;
Sec 08, W½NW¼;
Sec 09, W½NW¼, N½NE¼ and SE¼NE¼;
Sec 10, N½;
Sec 11, N½;
Sec 12, W½NW¼ and SE¼NW¼.
T. 08 S., R. 28 E.,
Sec 4, lot 1 and SE¼NE¼.
T. 14 S., R. 26 E.,
Sec 36, W½.
T. 16 S., R. 27 E.,

Sec 07, E½W½;
Sec 19, NE¼SE¼;
Sec 20, W½SE¼ and SW¼;
Sec 29, NE¼, E½NW¼, NW¼NW¼, and SW¼SE¼;
Sec 33, W½SW¼;
Sec 36, S½.
T. 17 S., R. 27 E.,
Sec 04, lot 4 (portion of).

The above described lands aggregate approximately 35,712 acres, more or less, in the counties of Grant, Morrow and Umatilla, Oregon.

Findings: In sec. 2 (3) and (4) of the OLEA, Congress found that consolidation of land ownerships through the exchange will facilitate sound and efficient management for both public and private lands, which will reduce administrative costs to the United States. Congress also found that the exchange will improve public access, aesthetic quality, and recreational opportunities within wild and scenic river corridors; and will provide protection and enhancement of habitat for threatened, endangered, or sensitive species. The NOALE Final Environmental Impact Statement supports these Congressional findings.

The appraisals show the value of the lands to be exchanged as approximately equal. Full equalization of values will be achieved by payment to the United States of funds in an amount not to exceed 25 percent of the total value of the public lands to be transferred.

Time and Place for Public Review: Upon publication of this notice in the **Federal Register** and in newspapers in general circulation in the vicinity of the public lands included in this exchange, beginning on Monday, October 30, 2000, the general public will have a 15 day review period to examine the comprehensive summaries of the appraisals for both the public and the private lands. The BLM is making these summaries available, in addition to the complete appraisals of the public and the private lands, in the public room of the Prineville District Office, the Baker Field Office, and the Land Office of the Oregon State Office.

ADDRESSES: The Comprehensive Summaries and Appraisals are available for inspection at the Prineville District Office, 3050 NE 3rd Street, Prineville, Oregon 97754, from 7:45 a.m. to 4:30 p.m., Monday through Friday. The Summaries and Appraisals are available for inspection at the Baker Field Office, 3165 10th Street, Baker City, Oregon 97814, from 7:45 a.m. to 4:30 p.m., Monday through Friday. You may also inspect these Summaries and the Appraisals, at the BLM's Oregon State Office, in the 7th floor Land Office, Branch of Realty and Records Services, 1515 S.W. 5th Avenue, Portland, Oregon 97201, from 8:30 a.m. to 4 p.m., Monday through Friday. All offices will be closed to the public on official holidays.

FOR FURTHER INFORMATION CONTACT: You may also receive detailed information on this exchange by writing or calling Barron Bail, District Manger, at the above Prineville address, phone 541–416–6700, Penny Dunn Woods, Field Office Manager, at the above Baker City address, phone 541–523–1256, or John K. Keith, Associate Deputy State Director for Management Services, at the above Portland address, phone 503–952–6091.

Dated: October 19, 2000.

Robert D. DeViney, Jr.,

Chief, Branch of Realty and Records Services.

[FR Doc. 00–27443 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–33–P

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Intent to Repatriate a Cultural Item in the Possession of the Field Museum of Natural History, Chicago, IL

AGENCY: National Park Service

ACTION: Notice

Notice is hereby given under the Native American Graves Protection and Repatriation Act, 43 CFR 10.10 (a)(3), of the intent to repatriate a cultural item in the possession of the Field Museum of Natural History that meets the definition of ''object of cultural patrimony'' under Section 2 of the Act.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR 10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has control of these cultural items. The National Park Service is not responsible for the determinations within this notice.

The cultural item is a totem pole, catalogue number 19341, accession 663. The totem pole is carved with an eagle, a thunderbird, and a bear.

Until 1899, the totem pole stood in Cape Fox, AK. The totem pole was removed from Cape Fox, AK by the Harriman Alaska Expedition in July 1899, when the expedition's steamer anchored near the deserted village. It was donated to the Field Museum of Natural History on January 15, 1900 by D. G. Elliott. Mr. Elliot had been a member of the Harriman Expedition, and was the curator of zoology at the Field Museum of Natural History at the time of donation.

Consultation evidence indicates that at the time of collection by the Harriman Alaska Expedition the totem pole was considered to be the communal property of residents of Cape Fox, AK and could not have been alienated, appropriated, or conveyed by any individual.

Based on the above-mentioned information, officials of the Field Museum of Natural History have determined that, pursuant to 43 CFR 10.2 (d)(4), this cultural item has ongoing historical, traditional, and cultural importance central to the tribe itself, and could not have been alienated, appropriated, or conveyed by any individual. Officials of the Field Museum of Natural History also have determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between this item and the Cape Fox Corporation.

This notice has been sent to officials of the Cape Fox Corporation. Representatives of any other Indian tribe that believes itself to be culturally affiliated with this cultural item should contact Dorren Martin-Ross, Registrar, Department of Anthropology, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605, telephone (312) 665–7824, before November 24, 2000. Repatriation of this cultural item to the Cape Fox Corporation may begin after that date if no additional claimants come forward.

Dated: October 16, 2000.

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships.

[FR Doc. 00–27393 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Intent to Repatriate Cultural Items in the Possession of the Alaska State Office, Bureau of Land Management, Anchorage, AK

AGENCY: National Park Service

ACTION: Notice

Notice is hereby given under the Native American Graves Protection and Repatriation Act, 43 CFR 10.10 (a)(3), of the intent to repatriate cultural items in the possession of the Alaska State Office, Bureau of Land Management, Anchorage, AK that meet the definition of unassociated funerary object under Section 2 of the Act.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR

10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has control of these cultural items. The National Park Service is not responsible for the determinations within this notice.

The 302 cultural items are stone and antler arrowheads and arrowhead fragments, chert flake tools, stone blade inserts, and ivory ornamental carvings.

During 1956-61, these cultural items were recovered by Dr. J. Louis Giddings during legally authorized excavations from a series of burials at Cape Krusenstern, Battle Rock Site vicinity, and the Choris Peninsula from five features judged to be former surface burials where all skeletal remains had completely decayed.

Based on geographic location, archeological evidence, and types of objects, these cultural items have been affiliated with Inupiat Eskimo culture and specifically with the Native Village of Kotzebue. This determination of cultural affiliation has been based upon the continuity of Native Americans in the Kotzebue area and their oral tradition that the area where the remains were found is within their traditional territory.

Based on the above-mentioned information, officials of the Bureau of Land Management have determined that, pursuant to 43 CFR 10.2(d)(2)(ii), these 302 cultural items listed above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of an Native American individual. Officials of the Bureau of Land Management also have determined that, pursuant to 43 CFR 10.2(e), there is a relationship of shared group identity that can be reasonably traced between these items and the Native Village of Kotzebue. This notice has been sent to officials of the Native Village of Kotzebue. Representatives of any other Indian tribe that believes itself to be culturally affiliated with these unassociated funerary objects should contact Dr. Robert E. King, Alaska State NAGPRA Coordinator, Bureau of Land Management, 222 West 7th Avenue, #13, Anchorage, AK 99513–7599, telephone (907) 271-5510, before November 24, 2000. Repatriation of these unassociated funerary objects to the Native Village of Kotzebue may begin after that date if no additional claimants come forward.

Dated: October 18, 2000.

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships.

[FR Doc. 00–27369 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Inventory Completion for Native American Human Remains and Associated Funerary Objects in the Control of the Bureau of Indian Affairs and in the Possession of the Oshkosh Public Museum, Oshkosh, WI

AGENCY: National Park Service

ACTION: Notice

Notice is hereby given in accordance with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA), 43 CFR 10.9, of the completion of an inventory of human remains and associated funerary objects in the control of the Bureau of Indian Affairs and in the possession of the Oshkosh Public Museum, Oshkosh, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR 10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has possession of these Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations within this notice.

A detailed assessment of the human remains and associated funerary objects was made by Oshkosh Public Museum professional staff in consultation with representatives of the Menominee Indian Tribe of Wisconsin.

In 1926, Oshkosh Public Museum staff Arthur Kannenberg excavated the graves of two individuals located on the Menominee Indian Reservation in Keshena, WI. The remains of one individual, believed to have been those of Chief Oshkosh, were re-interred at a new location in Oshkosh, WI shortly thereafter. The remains of the second individual, believed to have been those of one of Chief Oshkosh's wives, were not re-located. Two cervical vertebrae were removed from one of the two graves and donated to the Oshkosh Public Museum by an unknown person, presumably Mr. Kannenberg, at an unknown time after 1926. An unknown person, presumably Mr. Kannenberg, retained remnants of Chief Oshkosh's original casket, including pieces of glass, metal, cloth, wood, beads, three nails, and scraps of beaded cloth. These nine funerary objects were donated to the Oshkosh Public Museum, presumably by Mr. Kannenberg, at an unknown time between 1926-1945. At an unknown time, but presumably during the 1926 exhumation, 11 funerary objects consisting of a wooden spool, 8 buttons, shears, and 1 nail were collected from the grave of a wife of Chief Oshkosh. They were donated to the Oshkosh Public Museum by an unknown person, but presumed to be Mr. Kannenberg, at an unknown time between 1926–1945.

A contemporaneous account of the exhumation notes the identification of the remains as Chief Oshkosh based upon surface markers of ''three rocks marking the graves of the old chief and two of his wives. Several graves in this vicinity were opened, those of the wives being identified by earrings, brooches and jewelry in the one, and shears, needles, buttons and a spool in the other.''

Based on the above-mentioned information, officials of the Oshkosh Public Museum have determined that, pursuant to 43 CFR 10.2 (d)(1), the human remains listed above represent the physical remains of one individual of Native American ancestry. Officials of the Oshkosh Public Museum also have determined that, pursuant to 43 CFR 10.2 (d)(2), the 20 objects listed above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony. While the likely identity of the individual reported in this notice has been determined, officials of the Oshkosh Public Museum have not been able to trace a direct and unbroken line of descent to a particular individual, pursuant to 43 CFR 10.2 (b)(1). Lastly, officials of the Oshkosh Public Museum have determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between these Native American human remains and associated funerary objects and the Menominee Indian Tribe of Wisconsin.

This notice has been sent to officials of the Menominee Indian Tribe of Wisconsin. Any lineal descendent and representatives of any other Indian tribe that believes itself to be culturally affiliated with these human remains and associated funerary objects should contact Joan Lloyd, Registrar, Oshkosh Public Museum, 1331 Algoma Boulevard, Oshkosh, WI 54901, telephone (920) 424–4747, before November 24, 2000. Repatriation of the human remains and associated funerary objects to the Menominee Indian Tribe of Wisconsin may begin after that date if no additional claimants come forward.

Dated: October 6, 2000.

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships.

[FR Doc. 00–27392 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Inventory Completion for Native American Human Remains and Associated Funerary Objects in the Possession of the Oshkosh Public Museum, Oshkosh, WI

AGENCY: National Park Service

ACTION: Notice

Notice is hereby given in accordance with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA), 43 CFR 10.9, of the completion of an inventory of human remains and associated funerary objects in the possession of the Oshkosh Public Museum, Oshkosh, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR 10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has control of these Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations within this notice.

A detailed assessment of the human remains and associated funerary objects was made by Oshkosh Public Museum professional staff in consultation with representatives of the Menominee Indian Tribe of Wisconsin.

In 1961, human remains representing three individuals were removed during excavations at the Riverside Site (20-ME-1), Menominee County, MI by Oshkosh Public Museum staff Robert Hruska. No known individuals were identified. The four associated funerary objects include copper beads, bifaces, and fiber fragments.

The remains of one of the three individuals are cremated. The Riverside Site is a multi-component cemetery and habitation site. Intermittent occupation of the site spans a time period circa 1000 B.C.-A.D. 1850. On the basis of the four associated funerary objects, these cremated remains are dated to the earliest occupation of the Riverside Site. The stylistic attributes of the copper objects are characteristic of the Red Ochre Culture, an archeologically defined culture within the Archaic Period, dated to 1000-400 B.C. Oral history sources identify the mouth of Green Bay, WI, where the Riverside Site is located, as the emergence area for the Menominee people.

The remains of two of the three individuals were removed from Feature A. Funerary objects date this burial feature to the 18th and 19th centuries. These objects, not in the possession of the Oshkosh Public Museum, consist of glass beads, a kettle brass bracelet, and a ceramic vessel.

In 1964, human remains representing 1 individual and 31 associated funerary objects were removed during excavations conducted by the Wisconsin Archaeological Society from the Potato Rapids Burial Site (47-Mt-79), Peshtigo, Marinette County, WI. These remains and objects were donated to the Oshkosh Public Museum by the Wisconsin Archaeological Society at an unknown date after 1964. No known individual was identified. The associated funerary objects include an iron axe, two bone beads, wampum beads, seed beadwork, a metal bowl, five silver bracelets, four silver brooches, six silver buttons, one metal can, one comb, one silver crescent, two silver earrings, three gunflints, one clay pipe, fabric, and fiber remains. The associated funerary objects are trade items consistent with materials owned by Menominee people circa A.D. 1830-1850.

The Potato Rapids Burial Site is located within the area occupied by the Menominee Indians in the 19th century.

Circa 1936, human remains representing one individual were removed from the Robert Grignon Trading Post Site (47-Wn-137), Winnebago, WI by Oshkosh Public Museum staff Arthur Kannenberg. Documentation indicates that the tombstone that marked this burial identified the remains as those of ''Mary/wife of/Robert Grignon/died Dec 24, 1851/age/37 years.'' The remains were, reportedly, re-buried in the same grave except for two vertebrae and two teeth that are now in the possession of the Oshkosh Public Museum. A contemporaneous account of the excavation of the grave identified Mary Grignon as the daughter of a full-blooded Menominee chief. Other historical sources indicate that her Menominee name is Wak-nau-go-lak. No associated funerary objects are present.

Oral history indicates that the Riverside Site is located in the prehistoric traditional territory of the Menominee people. Historical evidence indicates that both the Potato Rapids Burial Site and the 19th century component of the Riverside Site were located within the historically documented 19th century Menominee territory at the time of occupation. Historical evidence provides likely personal identification and cultural affiliation for one of the individuals. There is no evidence to contradict these findings.

Based on the above-mentioned information, officials of the Oshkosh Public Museum have determined that, pursuant to 43 CFR 10.2 (d)(1), the human remains described above represent the physical remains of five individuals of Native American ancestry. Officials of the Oshkosh Public Museum also have determined that, pursuant to 43 CFR 10.2 (d)(2), the 35 objects listed above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony. While the likely identity of one of the individuals reported in this notice has been determined, officials of the Oshkosh Public Museum have not been able to trace a direct and unbroken line of descent to a particular individual, pursuant to 43 CFR 10.2 (b)(1). Lastly, officials of the Oshkosh Public Museum have determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between these Native American human remains and associated funerary objects and the Menominee Indian Tribe of Wisconsin.

This notice has been sent to officials of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Boise Fort Band (Nett Lake) of the Minnesota Chippewa Indians; Fond du Lac Band of Minnesota Chippewa Indians; Grand Portage Band of the Minnesota Chippewa Indians; Keweenaw Bay Indian Community of L'Anse & Ontonagon Bands of Chippewa Indians of the L'Anse Reservation, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of the Lac Courte Oreilles Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of Minnesota Chippewa Indians; Menominee Indian Tribe of Wisconsin; Mille Lacs Band of Minnesota Chippewa Indians; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Sokoagon Chippewa Community of the Mole Lake Band of Chippewa Indians, Wisconsin; St. Croix Chippewa Indians of Wisconsin, St. Croix Reservation;

Stockbridge-Munsee Community of Mohican Indians of Wisconsin; White Earth Band of Minnesota Chippewa Indians; and Hannahville Indian Community of Wisconsin Potawatomi Indians of Michigan. Representatives of any other Indian tribe that believes itself to be culturally affiliated with these human remains and associated funerary objects should contact Joan Lloyd, Registrar, Oshkosh Public Museum, 1331 Algoma Boulevard, Oshkosh, WI 54901, telephone (920) 424–4747, before November 24, 2000. Repatriation of the human remains and associated funerary objects to the Menominee Indian Tribe of Wisconsin may begin after that date if no additional claimants come forward.

Dated: October 6, 2000.

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships.

[FR Doc. 00–27394 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Intent to Repatriate a Cultural Item in the Possession of the Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA

AGENCY: National Park Service.

ACTION: Notice.

Notice is hereby given under the Native American Graves Protection and Repatriation Act, 43 CFR 10.10 (a)(3), of the intent to repatriate a cultural item in the possession of the Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA that meets the definition of ''unassociated funerary object'' under Section 2 of the Act.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR 10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has control of these cultural items. The National Park Service is not responsible for the determinations within this notice.

The one cultural item is a hide scraper made of an elk antler.

Between 1878-1893, this cultural item was collected in Douglas County or Sarpy County, NE by Mr. William R. Morris. In 1930, Mrs. William Morris sold the cultural item to Mr. William Claflin, Jr. In 1985, this cultural item was donated to the museum by Mr. Claflin.

Museum records indicate that this object was removed from an Omaha grave south of Omaha in Douglas County or Sarpy County, NE. Based on the specific cultural affiliation described by the collector, this burial was most likely an Omaha burial from the historic period.

Based on the above-mentioned information, officials of the Peabody Museum of Archaeology and Ethnology have determined that, pursuant to 43 CFR 10.2 (d)(2)(ii), this one cultural item is reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of an Native American individual. Officials of the Peabody Museum of Archaeology and Ethnology also have determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between this item and the Omaha Tribe of Nebraska. This notice has been sent to officials of the Omaha Tribe of Nebraska. Representatives of any other Indian tribe that believes itself to be culturally affiliated with this unassociated funerary object should contact Barbara Isaac, Repatriation Coordinator, Peabody Museum of Archaeology and Ethnology, Harvard University, 11 Divinity Avenue, Cambridge, MA 02138, telephone (617) 495-2254, before November 24, 2000. Repatriation of this unassociated funerary object to the Omaha Tribe of Nebraska may begin after that date if no additional claimants come forward.

Dated: October 16, 2000.

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships.

[FR Doc. 00–27370 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Inventory Completion for Native American Human Remains and Associated Funerary Objects in the Possession of The State Museum of Pennsylvania, Harrisburg, PA

AGENCY: National Park Service

ACTION: Notice

Notice is hereby given in accordance with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA), 43 CFR 10.9, of the completion of an inventory of human remains and associated funerary objects in the possession of The State Museum of Pennsylvania, Harrisburg, PA.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR 10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has control of these Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations within this notice.

A detailed assessment of the human remains was made by The State Museum of Pennsylvania professional staff in consultation with representatives of the Seneca Nation of New York, the Seneca-Cayuga Tribe of Oklahoma, and the Tonawanda Band of Seneca Indians of New York.

At an unknown time, human remains representing one individual were removed from the Conestoga Indian Town Site (36La52), Manor Township, Lancaster County, PA by Samual Farver. Mr. Farver donated these remains to The State Museum of Pennsylvania in 1961. No known individual was identified. No associated funerary objects are present.

At an unknown time, human remains representing 3 individuals and 86 associated funerary objects were removed from the Conestoga Indian Town Site by Robert Ditchburn. Mr. Ditchburn donated the remains and objects to The State Museum of Pennsylvania in 1967. No known individuals were identified. The objects include shell, glass, and seed beads; woven fabric fragments; miscellaneous iron fragments; an iron knife blade; lead musket balls; a pewter spoon; wood fragments; and a brass medallion, rings, and wire chain segments.

In 1972, human remains representing 86 individuals and 63,176 associated funerary objects were removed during excavations by The State Museum of Pennsylvania at the Conestoga Indian Town Site. No known individuals were identified. The objects include animal fragments (bone refuse, fur/hair, turtle shell fragments, snail shell), beads (catlinite, shell, glass, seed, wampum, bone, brass, wood), bone combs, brass kettles, brick fragments, buckskins (with and without fur attached), charcoal fragments, clothing fasteners (brass and iron buckles; pewter, brass, wood with brass casing, and iron(?) buttons; straight pins), catlinite effigies, glass fragments (goblet stems, cruets, medicine bottles, miscellaneous), gun parts (lock, trigger guard, barrel, side plates, frizzen, flints, ramrod, brass buttplate, buckskin bullet pouch, bullet mold, lead musket balls, powder horn fragments, gunpowder), 18th century ceramics (comb slipware mug, redware sherds, redware pitcher, redware dish, redware cup), iron tools (axe, hoe, claw hammer, awl, knife blades with wooden and bone clasps and handles, nails and screws, scissors), iron and brass mouth harps, mirror fragments, miscellaneous brass items (bands, wire, bands around fabric, hinge, vanity box, washers, thimbles, hawk and sleigh bells, kettles), miscellaneous iron items (spring, needle-like fragments fused with string, pot fragments, snuff boxes), miscellaneous lead fragments, miscellaneous leather fragments (thongs, thong fragment with a brass rivet, shoe parts), miscellaneous pewter fragments, miscellaneous seeds and nuts, ornamentation (medallion; rings; chain fragments; jinglers; coins; coils; cross; wire choker; cufflinks; bracelets; shell, catlinite, and other stone pendants; pewter crucifix and turtle; shell disc; gorget; runtees; silver broaches, crucifix, and hair ornaments), smoking pipes (kaolin, pewter, earthenware), spectacles (brass wire with lenses), spoons (pewter, wood, brass), stone tools (arrow shaft fragments, flint core, hammerstone, brass and stone projectile points), strike-a-lights, textile fragments (cordage, woven cloth with and without brocade),whetstones, and wood fragments including bowl and barrel fragments.

The Euroamerican assemblage of objects dates the burials to the 18th century. Ethnohistoric, documentary, and archeological evidence indicates that the Conestoga Indian Town Site was occupied by Seneca and Susquehannock Indians between A.D. 1700–1763. There is no evidence to contradict this.

Based on the above-mentioned information, officials of The State Museum of Pennsylvania have determined that, pursuant to 43 CFR 10.2 (d)(1), the human remains listed above represent the physical remains of 90 individuals of Native American ancestry. Officials of The State Museum of Pennsylvania also have determined that, pursuant to 43 CFR 10.2 (d)(2), the 63,262 objects listed above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony. Lastly, officials of The State Museum of Pennsylvania have determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between these Native American human remains and associated funerary objects and the Seneca Nation of New York, the Seneca-Cayuga Tribe of Oklahoma, and the Tonawanda Band of Seneca Indians of New York.

This notice has been sent to officials of the Seneca Nation of New York, the Seneca-Cayuga Tribe of Oklahoma, and the Tonawanda Band of Seneca Indians of New York. Representatives of any other Indian tribe that believes itself to be culturally affiliated with these human remains and associated funerary objects should contact Stephen G. Warfel, Senior Curator, Archaeology, The State Museum of Pennsylvania, 300 North Street, Harrisburg, PA 17120–0024, telephone (717) 783–2887, before November 24, 2000. Repatriation of the human remains and associated funerary objects to the Seneca Nation of New York, the Seneca-Cayuga Tribe of Oklahoma, and the Tonawanda Band of Seneca Indians of New York may begin after that date if no additional claimants come forward.

Dated: October 16, 2000

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships

[FR Doc. 00–27396 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

National Park Service.

Notice of Inventory Completion for Native American Human Remains and Associated Funerary Objects in the Possession of The State Museum of Pennsylvania, Harrisburg, PA

AGENCY: National Park Service.

ACTION: Notice.

Notice is hereby given in accordance with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA), 43 CFR 10.9, of the completion of an inventory of human remains and associated funerary objects in the possession of The State Museum of Pennsylvania, Harrisburg, PA.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 43 CFR 10.2 (c). The determinations within this notice are the sole responsibility of the museum, institution, or Federal agency that has control of these Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations within this notice.

A detailed assessment of the human remains was made by The State Museum of Pennsylvania professional staff in consultation with representatives of the Wyandotte Tribe of Oklahoma.

At an unknown time, human remains representing 29 individuals and 53 associated funerary objects were removed during excavations at the Wyandotte Town Site (also known as the West Pittsburg Site) (36Lr1), Taylor Township, Lawrence County, PA by Marco Hervatin. Mr. Hervatin donated the remains and objects to The State Museum of Pennsylvania in 1961. No known individuals were identified. The associated funerary objects include buckskin leather fragments, unidentified organic material, brass rings, shell beads, and miscellaneous iron fragments with wood attached.

The Euroamerican assemblage of objects found with the remains dates the burials to the 18th century. Ethnohistoric, documentary, and archeological evidence indicates that the Wyandotte Town Site was occupied by the Wyandotte Indians between A.D. 1747–1750. There is no evidence to contradict this.

Based on the above-mentioned information, officials of The State Museum of Pennsylvania have determined that, pursuant to 43 CFR 10.2 (d)(1), the human remains listed above represent the physical remains of 29 individuals of Native American ancestry. Officials of The State Museum of Pennsylvania also have determined that, pursuant to 43 CFR 10.2 (d)(2), the 53 objects listed above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony. Lastly, officials of The State Museum of Pennsylvania have determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between these Native American human remains and associated funerary objects and the Wyandotte Tribe of Oklahoma.

This notice has been sent to officials of the Wyandotte Tribe of Oklahoma. Representatives of any other Indian tribe that believes itself to be culturally affiliated with these human remains and associated funerary objects should contact Stephen G. Warfel, Senior Curator, Archaeology, The State Museum of Pennsylvania, 300 North Street, Harrisburg, PA 17120–0024, telephone (717) 783–2887, before November 24, 2000. Repatriation of the human remains and associated funerary objects to the Wyandotte Tribe of Oklahoma; may begin after that date if no additional claimants come forward.

Dated: October 16, 2000.

John Robbins,

Assistant Director, Cultural Resources Stewardship and Partnerships.

[FR Doc. 00–27397 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation Fish and Wildlife Service

Rescission of Notice of Availability of Final Environmental Impact Statement/Environmental Impact Report

AGENCIES: Fish and Wildlife Service, Bureau of Reclamation, Interior.

ACTION: Rescission of notice of availability.

SUMMARY: This notice announces the rescission of the notice of availability of the joint Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) for the Trinity River Mainstem Fishery Restoration published in the **Federal Register** on October 20, 2000 (65 FR 63087). The Notice of Availability of the Final Environmental Impact Statement for the proposed Trinity River Mainstem Restoration in the **Federal Register** on October 20, 2000, was issued in error. The FEIS/EIR will be issued shortly. A revised notice of availability will be issued in the **Federal Register** at that time.

FOR FURTHER INFORMATION CONTACT: Dr. MaryEllen Mueller, U.S. Fish and Wildlife Service, 2800 Cottage Way, Suite W–2606, Sacramento, CA 95825 (916) 414–6464.

Authority: NEPA, the National Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 *et seq.*); E.O. 11514, March 5, 1970, as amended by E.O. 11991, May 24, 1977; and CEQ Regulations 40 CFR 1503.1).

Willie R. Taylor,

Director, Office of Environmental Policy and Compliance.

[FR Doc. 00–27502 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

Bay-Delta Advisory Council Meeting

AGENCY: Bureau of Reclamation, Interior.

ACTION: Notice of meeting.

SUMMARY: The Bay-Delta Advisory Council (BDAC) will meet on November 15, 2000, to discuss the Director's Report. CALFED Program Update, and the Ecosystem Restoration Program. The CALFED agencies will also formally thank the Council for all their hard work. This meeting is open to the public. Interested persons may make oral statements to BDAC, or may file written statements for consideration.

Our practice is to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their home address form public disclosure, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity from public disclosure, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public disclosure in their entirety.

DATES: The BDAC meeting will be held from 9:30 a.m. to 3 p.m. on Wednesday, November 15, 2000.

ADDRESSES: The Bay-Delta Advisory Council will meet at the Sacramento Convention Center at 13th and "J" Streets, Sacramento, CA 95814, (916) 264–5291.

FOR FURTHER INFORMATION CONTACT: Eugenia Laychak, CALFED Bay-Delta Program, at (916) 657–2666. If reasonable accommodation is needed due to a disability, please contact the Equal Employment Opportunity Office at (916) 653–6952 or TDD (916) 653–6934 at least one week prior to the meeting.

SUPPLEMENTARY INFORMATION: The San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta system) is a critically important part of California's natural environment and economy. In recognition of the serious problems facing the region and the complex resource management decisions that must be made, the state of California and the Federal government are working together to stabilize, protect, restore, and enhance the Bay-Delta system. The State and Federal agencies with management and regulatory responsibilities in the Bay-Delta system are working together as CALFED to provide policy direction and oversight for the process.

One area of Bay-Delta management includes the establishment of a joint State-Federal process to develop long-term solutions to problems in the Bay-Delta system related to fish and wildlife, water supply reliability, natural disasters, and water quality. The intent is to develop a comprehensive and balanced plan, which addresses all of the resource problems. This effort, the CALFED Bay-Delta Program (Program), is being carried out under the policy direction of CALFED. The Program is exploring and developing a long-term solution for a cooperative planning process that will determine the most appropriate strategy and actions necessary to improve water quality, restore health to the Bay-Delta ecosystem, provide for a variety of beneficial uses, and minimize Bay-Delta system vulnerability. A group of citizen advisors representing California's agricultural, environmental, urban, business, fishing, and other interests who have a stake in finding long-term solutions for the problems affecting the Bay-Delta system has been chartered under the Federal Advisory Committee Act (FACA). The BDAC provides advice to CALFED on the program mission, problems to be addressed, and objectives for the Program. BDAC provides a forum to help ensure public participation, and will review reports and other materials prepared by the CALFED staff.

Minutes of the meeting will be maintained by the Program, Suite 1155, 1416 Ninth Street, Sacramento, CA 95814, and will be available for public inspection during regular business hours, Monday through Friday within 30 days following the meeting.

Dated: October 19, 2000.

Lester A. Snow,

Regional Director, Mid-Pacific Region.

[FR Doc. 00–27368 Filed 10–24–00; 8:45 am]

BILLING CODE 4310–MN–M

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 701–TA–403 and 731–TA–895–897 (Preliminary)]

Pure Magnesium From China, Israel, and Russia

AGENCY: United States International Trade Commission.

ACTION: Institution of countervailing duty and antidumping investigations and scheduling of preliminary phase investigations.

SUMMARY: The Commission hereby gives notice of the institution of investigations and commencement of preliminary phase countervailing and antidumping duty investigations Nos. 701–TA–403 and 731–TA–895–897 (Preliminary) under sections 703(a) and 733(a) of the Tariff Act of 1930 (19 U.S.C. 1671b(a)

and 1673b(a)) (the Act) to determine whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from China, Israel, and Russia of pure magnesium, provided for in subheadings 8104.11.00, 8104.19.00, and 8104.30.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value, and by reason of imports from Israel of pure magnesium, provided for in subheadings 8104.11.00, 8104.19.00, and 8104.30.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be subsidized by the Government of Israel. Unless the Department of Commerce extends the time for initiation pursuant to section 702(c)(1)(B) and 732(c)(1)(B) of the Act (19 U.S.C. 1671a(c)(1)(B) and 1673a(c)(1)(B)), the Commission must reach preliminary determinations in countervailing duty and antidumping duty investigations in 45 days, or in this case by December 1, 2000. The Commission's views are due at the Department of Commerce within five business days thereafter, or by December 8, 2000.

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's rules of practice and procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A and B (19 CFR part 207).

EFFECTIVE DATE: October 17, 2000.

FOR FURTHER INFORMATION CONTACT: Fred Fischer (202–205–3179 or ffischer@usitc.gov), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (*http://www.usitc.gov*).

SUPPLEMENTARY INFORMATION:

Background.—These investigations are being instituted in response to a petition filed on October 17, 2000, by Magnesium Corporation of America, Salt Lake City, UT, and the United Steel Workers of America, Local 8319, Salt Lake City, UT.

Participation in these investigations and public service list.—Persons (other than petitioners) wishing to participate in the investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in §§ 201.11 and 207.10 of the Commission's rules, not later than seven days after publication of this notice in the **Federal Register**. Industrial users and (if the merchandise under investigation is sold at the retail level) representative consumer organizations have the right to appear as parties in Commission antidumping investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance.

Limited disclosure of business proprietary information (BPI) under an administrative protective order (APO) and BPI service list.—Pursuant to § 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in these investigations available to authorized applicants representing interested parties (as defined in 19 U.S.C. § 1677(9)) who are parties to the investigations under the APO issued in the investigations, provided that the application is made not later than seven days after the publication of this notice in the **Federal Register**. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Conference.—The Commission's Director of Operations has scheduled a conference in connection with these investigations for 9:30 a.m. on November 7, 2000, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Parties wishing to participate in the conference should contact Fred Fischer (202–205–3179 or ffischer@usitc.gov) not later than November 1, 2000, to arrange for their appearance. Parties in support of the imposition of antidumping duties in these investigations and parties in opposition to the imposition of such duties will each be collectively allocated one hour within which to make an oral presentation at the conference. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the conference.

Written submissions.—As provided in §§ 201.8 and 207.15 of the Commission's rules, any person may submit to the Commission on or before November 13, 2000, a written brief containing information and arguments pertinent to the subject matter of the investigations. Parties may file written testimony in connection with their presentation at the conference no later than three days before the conference. If briefs or written testimony contain BPI, they must conform with the requirements of §§ 201.6, 207.3, and 207.7 of the Commission's rules. The Commission's rules do not authorize filing of submissions with the Secretary by facsimile or electronic means.

In accordance with §§ 201.16(c) and 207.3 of the rules, each document filed by a party to the investigations must be served on all other parties to the investigations (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: These investigations are being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to § 207.12 of the Commission's rules.

Issued: October 19, 2000.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 00–27424 Filed 10–24–00; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 701–TA–362 (Review) and 731–TA–707–710 (Review) and Investigations Nos. 701–TA–364 (Review) and 731–TA–711 and 731–TA–713–716 (Review)]

Seamless Pipe From Argentina, Brazil, Germany, and Italy and Oil Country Tubular Goods From Argentina, Italy, Japan, Korea, and Mexico

AGENCY: United States International Trade Commission.

ACTION: Notice of Commission determinations to conduct full five-year reviews concerning the countervailing duty order and antidumping duty orders on seamless pipe from Argentina, Brazil, Germany, and Italy and the countervailing duty order and antidumping duty orders on oil country tubular goods from Argentina, Italy, Japan, Korea, and Mexico.

SUMMARY: The Commission hereby gives notice that it will proceed with full reviews pursuant to section 751(c)(5) of the Tariff Act of 1930 (19 U.S.C. 1675(c)(5)) to determine whether revocation of the countervailing duty order and antidumping duty orders on seamless pipe from Argentina, Brazil,

Germany, and Italy and the countervailing duty order and antidumping duty orders on oil country tubular goods from Argentina, Italy, Japan, Korea, and Mexico would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time. The Commission is considering conducting the five-year reviews for seamless pipe from Argentina, Brazil, Germany, and Italy in conjunction with the five-year reviews for oil country tubular goods from Argentina, Italy, Japan, Korea, and Mexico due to similarities in the two sets of five-year reviews. A schedule for the reviews will be established and announced at a later date. For further information concerning the conduct of these reviews and rules of general application, consult the Commission's rules of practice and procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A, D, E, and F (19 CFR part 207).

EFFECTIVE DATE: October 5, 2000.

FOR FURTHER INFORMATION CONTACT: Vera Libeau (202–205–3176), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (*http://www.usitc.gov*).

SUPPLEMENTARY INFORMATION: On October 5, 2000, the Commission determined that it should proceed to full reviews in the subject five-year reviews pursuant to section 751(c)(5) of the Act. With regard to all subject seamless pipe from Argentina, Brazil, and Italy, the Commission found that both the domestic interested party group responses and the respondent interested party group responses to its notice of institution [1] were adequate and voted to conduct full reviews. With regard to seamless pipe from Germany, the Commission found that the domestic interested party group response was adequate and the respondent interested party group response was inadequate. The Commission also found that other circumstances warranted conducting a full review. With regard to all subject oil country tubular goods from Argentina, Italy, Korea, and Mexico, the Commission found that both the domestic interested party group responses and the respondent interested party group responses to its notice of institution [2] were adequate and voted to conduct full reviews. With regard to oil country tubular goods from Japan, the Commission found that the domestic interested party group response was adequate and the respondent interested party group response was inadequate. The Commission also found that other circumstances warranted conducting a full review.

A record of the Commissioners' votes, the Commission's statement on adequacy, and any individual Commissioner's statements will be available from the Office of the Secretary and at the Commission's web site.

Authority: These reviews are being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to § 207.62 of the Commission's rules.

Issued: October 18, 2000.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 00–27425 Filed 10–24–00; 8:45 am]

BILLING CODE 7020–02–P

[1] The notice of institution for all of the subject reviews was published in the **Federal Register** on July 3, 2000 (65 FR 41090).

[2] The notice of institution for all of the subject reviews was published in the **Federal Register** on July 3, 2000 (65 FR 41088).

INTERNATIONAL TRADE COMMISSION

Sunshine Act Meeting

AGENCY HOLDING THE MEETING: United States International Trade Commission.

TIME AND DATE: November 2, 2000 at 11 a.m.

PLACE: Room 101, 500 E Street S.W., Washington, DC 20436 Telephone: (202) 205–2000.

STATUS: Open to the public.

MATTERS TO BE CONSIDERED:

1. Agenda for future meeting: none
2. Minutes
3. Ratification List
4. Inv. Nos. AA1921–197; 701-TA–231, 319–320, 322, 325–328, 340, 342, and 348–350; and 731-TA–573–576, 578, 582–587, 604, 607–608, 612, and 614–618 (Review) (Certain Carbon Steel Products from Australia, Belgium, Brazil, Canada, Finland, France, Germany, Japan, Korea, Mexico, the Netherlands, Poland, Romania, Spain, Sweden, Taiwan, and the United Kingdom. (The Commission is currently scheduled to transmit its determination and Commissioners' opinions to the Secretary of Commerce on November 20, 2000.)
5. Outstanding action jackets:

(1.) Document No. GC–00–071: Administrative matters.

In accordance with Commission policy, subject matter listed above, not disposed of at the scheduled meeting, may be carried over to the agenda of the following meeting.

Issued: October 23, 2000.

By order of the Commission:

Donna R. Koehnke,

Secretary.

[FR Doc. 00–27596 Filed 10–23–00; 2:12 pm]

BILLING CODE 7020–02–U

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

Manufacturer of Controlled Substances; Notice of Registration

By Notice dated March 23, 2000, and published in the **Federal Register** on March 30, 2000, (65 FR 16963), Lilly Del Caribe, Inc., Chemical Plant, Kilometer 146.7, State Road 2, Mayaguez, Puerto Rico 00680, made application by renewal to the Drug Enforcement Administration (DEA) to be registered as a bulk manufacturer of dextropropoxyphene (9273), a basic class of controlled substance listed in Schedule II.

The firm plans to bulk manufacture product for distribution to its customers.

No comments or objections have been received. DEA has considered the factors in Title 21, United States Code, Section 823(a) and determined that the registration of Lilly Del Caribe, Inc., to manufacture dextropropoxyphene is consistent with the public interest at this time. DEA has investigated Lilly Del Caribe, Inc. on a regular basis to ensure that the company's continued registration is consistent with the public interest. This investigation included inspection and testing of the company's physical security systems, audits of the company's records, verification of the company's compliance with state and local laws, and a review of the company's background and history. Therefore, pursuant to 21 U.S.C. 823 and 28 CFR 0.100 and 0.104, the Deputy Assistant Administrator, Office of Diversion Control, hereby orders that the application submitted by the above firm for registration as a bulk manufacturer of the basic class of controlled substance listed above is granted.

Dated: October 16, 2000.

John H. King,

Deputy Assistant Administrator, Office of Diversion Control, Drug Enforcement Administration.

[FR Doc. 00–27427 Filed 10–24–00; 8:45 am]

BILLING CODE 4410–09–M

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

Manufacturer of Controlled Substances; Notice of Registration

By Notice dated June 7, 2000, and published in the **Federal Register** on June 22, 2000, (65 FR 38861), Wildlife Laboratories, Inc., 1401 Duff Drive, Suite 600, Fort Collins, Colorado 80524, made application to the Drug Enforcement Administration (DEA) to be registered as a bulk manufacturer of carfentanil (9743), a basic class of controlled substance listed in Schedule II.

The firm plans to manufacture the listed controlled substance for distribution to its customers.

No comments or objections have been received. DEA has considered the factors in title 21, United States Code, section 823(a) and determined that the registration of Wildlife Laboratories to manufacture carfentanil is consistent with the public interest at this time. DEA has investigated Wildlife Laboratories to ensure that the company's registration is consistent with the public interest. This investigation included inspection and testing of the company's physical security systems, verification of the company's compliance with state and local laws, and a review of the company's background and history. Therefore, pursuant to 21 U.S.C. 823 and 28 CFR 0.100 and 1.104, the Deputy Assistant Administrator, Office of Diversion Control, hereby orders that the application submitted by the above firm for registration as a bulk manufacturer of the basic class of controlled substance listed above is granted.

Dated: October 17, 2000.

John H. King,

Deputy Assistant Administrator, Office of Diversion Control, Drug Enforcement Administration.

[FR Doc. 00–27428 Filed 10–24–00; 8:45 am]

BILLING CODE 4410–09–M

DEPARTMENT OF LABOR

Office of the Secretary

Advisory Committee on Veterans' Employment and Training; Notice of Renewal

In accordance with the provisions of the Federal Advisory Committee Act and Office of Management and Budget Circular A–63—of March 1974, and after consultation with GSA, the Secretary of Labor has determined that the renewal of the Advisory Committee on Veterans' Employment and Training is in the public interest in connection with the performance of duties imposed on the Department by section 4110 of title 38, United States Code.

The Advisory Committee on Veterans' Employment and Training shall: Assess the employment and training needs of veterans; determine the extent to which the programs and activities of the Department of Labor are meeting such needs; carry out such other activities that are necessary to make the recommendations required by law and, at such times as the Committee may determine, report to the Secretary of Labor on the employment and training needs of veterans.

The Committee shall consist of at least 12, but not more than 18, individuals appointed by the Secretary of Labor to serve as members of the Advisory Committee, consisting of: representatives nominated by veterans' organizations that are chartered by Federal law and have a national employment program, and not more than 6 individuals who are recognized authorities in the fields of business, employment, training, rehabilitation, or labor and who are not employees of the Department of Labor.

The Advisory Committee will report to the Assistant Secretary for Veterans' Employment and Training. It will function solely as an advisory body and in compliance with the provisions of the Federal Advisory Committee Act, and its charter will be filed under the Act.

For further information contact Ms. Polin Cohanne, Chief of Staff, Office of the Assistant Secretary for Veterans' Employment and Training, U.S. Department of Labor 200 Constitution Avenue, N.W., Washington, D.C. 20210, telephone (202) 693–4741.

Signed at Washington, D.C., this 19th day of October, 2000.

Alexis M. Herman,

Secretary of Labor.

[FR Doc. 00–27398 Filed 10–24–00; 8:45 am]

BILLING CODE 4510–79–M

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

Sunshine Act Meeting

Time and Place

Friday, November 15, 2000—9–4:30 p.m.

Marriott Residence Inn (Washington/Jefferson Room), 1199 Vermont Avenue, NW., Washington, DC

Matters To Be Discussed

9–11 a.m.
- Welcome and introduction of new members
- Adminstration matters
- Committee/program reports

11–4:15 p.m.
- Discussion and reports on the ''Assessment of Federal Government Information and the Future of the National Technical Information Service (NTIS)''

To request further information or to make special arrangements for persons with disabilities, contact Barbara Whiteleather (telephone: 202–606–9200; fax: 202–606–9203; e-mail: bwhiteleather@nclis.gov) no later than one week in advance of the meeting.

Dated: October 17, 2000.

Robert S. Willard,

NCLIS Executive Director.

[FR Doc. 00–27523 Filed 10–23–00; 11:22 am]

BILLING CODE 7527–$$–M

NATIONAL AREONAUTICS AND SPACE ADMINISTRATION

[Notice 00–129]

NASA Advisory Council (NAC), Earth Systems Science and Applications Advisory Committee, Technology Subcommittee; Meeting

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act, Pub. L. 92–463, as amended, the National Aeronautics and Space Administration announces a meeting of a NASA Advisory Council, Earth Systems Science and Applications Advisory Committee, Technology Subcommittee.

DATES: Tuesday, November 14, 2000, 8:30 a.m. to 5:30 p.m.; and Wednesday, November 15, 2000, 8:30 a.m. to 3 p.m.

ADDRESS: NASA Headquarters, 300 E Street SW, MIC 3A, Washington, DC 20546

FOR FURTHER INFORMATION CONTACT: Mr. Granville Paules, National Aeronautics and Space Administration, Washington, DC 20546, 202/358–0706.

SUPPLEMENTARY INFORMATION: The meeting will be open to the public up to the seating capacity of the room. The agenda for the meeting is as follows:

—Welcome/Opening Remarks
—Joint Session with Information Systems Subcommittee
—Introductions and Joint Objectives
—Overview of Information Technology (IT) within the ESE Technology Program
—Infusion of IT into ESE Data/Information Systems
—IT Technology Development Plans
—Near Term Roadmaps and AIST Projects
—ESE Vision Era activity
—Multi-Enterprise IT development programs—ESE Relevance
—Intelligent Systems Program
—SBIR, IT Emphasis in Next Call
—Former UPN 632— Recent IT Selections
—Software Framework requirements of HPCC/ESS Cooperative Agreement Notice
—Joint Committee discussions—Chairpersons
—General Critique of Joint Meeting and Action Assignments
—Laser/Lidar Independent Review report summary
—ESE Vision FY 2001 Plan
—Overall Technology Roadmap Update
—NMP EO–1 Validation Plan and Post-Validation Opportunities
—Instrument Incubator Program focused solicitation
—Subcommittee Wrap-up and Recommendations

It is imperative that the meeting be held on these dates to accommodate the scheduling priorities of the key participants. Visitors will be requested to sign a visitor's register.

Dated: October 19, 2000.

Beth M. McCormick,

Advisory Committee Management Officer, National Aeronautics and Space Administration.

[FR Doc. 00–27314 Filed 10–24–00; 8:45 am]

BILLING CODE 7510–01–U

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice 00–130]

NASA Advisory Council (NAC), Earth Science Data and Information Systems and Services Advisory Subcommittee; Meeting

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act, Pub. L. 92–463, as amended, the National Aeronautics and Space Administration announces a meeting of the NASA Advisory Council, Earth Systems Science and Applications Advisory Committee.

DATES: Monday, November 13, 2000, 8:30 a.m. to 5:30 p.m.; and Tuesday, November 14, 2000, 8:30 a.m. to 4 p.m.

ADDRESSES: NASA Headquarters, 300 E Street SW, Room MIC 6B, Washington, DC 20546.

FOR FURTHER INFORMATION CONTACT: Ms. Martha Maiden, Code YS, National Aeronautics and Space Administration, Washington, DC 20546, 202/358–1078.

SUPPLEMENTARY INFORMATION: The meeting will be open to the public up to the seating capacity of the room. The agenda for the meeting is as follows:

—EOSDIS: What were learning and where we need to go
—ESE Data needs and Innovative Answers for Science and Applications
—SWAMP SDWG Study and Beyond
—ESE Outreach
—Digital Earth
—Data Centers of the DAAC Alliance
—Federation Report
—New DISS Status
—Points for Comment, Recommendations from Day One
—Reconvene with Technology Subcommittee for Joint Session
—Introductions and Joint Objectives
—Overview of Information Technology (IT) within the ESE Technology Program
—Infusion of IT into ESE Data/Information Systems
—Near Term Roadmaps and AIST Projects
—ESE Vision Era activity
—Intelligent Systems Program
—SBIR, IT Emphasis in Next Call
—Former UPN 632— Recent IT Selections
—Software Framework requirements of HPCC/ESS Cooperative Agreement Notice
—Joint Committee Discussions
—ESDISSAS Reconvenes: Recommendations, Wrap-up

It is imperative that the meeting be held on these dates to accommodate the scheduling priorities of the key participants. Visitors will be requested to sign a visitor's register.

Dated: October 19, 2000.

Beth M. McCormick,

Advisory Committee Management Officer, National Aeronautics and Space Administration.

[FR Doc. 00–27315 Filed 10–24–00; 8:45 am]

BILLING CODE 7510–01–U

NATIONAL CREDIT UNION ADMINISTRATION

Central Liquidity Facility

AGENCY: National Credit Union Administration (NCUA).

ACTION: Proposed Interpretive Ruling and Policy Statement (IRPS) 00–2, ''Central Liquidity Facility Advance Policy'', with request for comments.

SUMMARY: This policy statement is intended to clarify the role of the Central Liquidity Facility (CLF) and the circumstances when the CLF will approve a Regular or Agent Member's request for a CLF advance.

DATES: NCUA welcomes comments on this proposed IRPS. Comments must be received on or before December 26, 2000.

ADDRESSES: Comments should be directed to Becky Baker, Secretary of the Board. Mail or hand-deliver comments to: National Credit Union Administration, 1775 Duke Street, Alexandria, VA 22314–3428. You may also fax comments to (703) 518–6319 or e-mail comments to boardmail@ncua.gov. Please send comments by one method only.

FOR FURTHER INFORMATION CONTACT: J. Owen Cole, Jr., Vice President, CLF, at the above address, or telephone: (703) 518–6360 or Frank S. Kressman, Staff Attorney, at the above address, or telephone: (703) 518–6540.

SUPPLEMENTARY INFORMATION:

Background

The CLF operates in accordance with Title III of the Federal Credit Union Act (Act) and Part 725 of NCUA's regulations which implements Title III. 12 U.S.C. 1795–1795k; 12 CFR part 725. It was created in 1979 to improve the general financial stability of the credit union industry by helping to meet the liquidity needs of individual credit unions. This improved stability encourages savings, supports consumer and mortgage lending, and helps provide basic financial resources to all segments of the economy. In continuing to fulfill this mission, the CLF wishes to clarify its function and limitations in an ever-changing financial services environment.

Regulatory Procedures

Regulatory Flexibility Act

The Regulatory Flexibility Act requires NCUA to prepare an analysis to describe any significant economic impact agency rulemaking may have on a substantial number of small credit unions. For purposes of this analysis, credit unions under $1 million in assets are considered small credit unions. As of June 30, 1999, there were 1,690 small credit unions with a total of $807.3 million in assets, having an average size of $0.5 million. Small credit unions make up 15.6% of all credit unions, but only 0.2% of all credit union assets.

This proposed IRPS clarifies the role of the CLF and the circumstances when the CLF will approve advances. This proposed IRPS imposes no additional financial, regulatory, or other burden whatsoever on credit unions transacting business with the CLF. The NCUA has determined and certifies that this proposed IRPS will not have a significant economic impact on a substantial number of small credit unions.

Paperwork Reduction Act

NCUA has determined that this proposed IRPS does not increase paperwork requirements under the Paperwork Reduction Act of 1995 and regulations of the Office of Management and Budget.

Executive Order 13132

Executive Order 13132 encourages independent regulatory agencies to consider the impact of their regulatory actions on state and local interests. In adherence to fundamental federalism principles, NCUA, an independent regulatory agency as defined in 44 U.S.C. 3502(5), voluntarily complies with the executive order.

This proposed IRPS applies to all credit unions doing business with the CLF, but does not have substantial direct effect on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. NCUA has determined that this proposed IRPS does not constitute a policy that has federalism implications for purposes of the executive order.

By the National Credit Union Administration Board, on October 19, 2000.

Becky Baker,

Secretary of the Board.

For the reasons stated above, NCUA proposes that IRPS 00–2 read as follows:

1. The authority citation for part 725 continues to read as follows:

Authority: 12 U.S.C. 1795–1795f.

2. IRPS 00–2 is proposed as follows:

Interpretive Ruling and Policy Statement No. 00–2

Central Liquidity Facility Advance Policy

Purpose

Congress established the Central Liquidity Facility (CLF) in 1979 and authorized the NCUA Board, acting as the CLF Board, to prescribe the manner in which the general business of the CLF is to be conducted. The CLF was created to improve the general financial stability of the credit union industry by meeting the liquidity needs of individual credit unions. This improved stability encourages savings, supports consumer and mortgage lending, and helps provide basic financial resources to all segments of the economy. This policy statement is intended to clarify the role of the CLF and the circumstances under which the CLF will approve a Regular or Agent Member's request for a CLF advance.

Liquidity Needs

The liquidity needs of natural person credit unions for which CLF advances are appropriate are limited to:

A. Short-term adjustment credit available to assist in meeting temporary requirements for funds or to cushion more persistent outflows of funds pending an orderly readjustment of credit union assets and liabilities;

B. Seasonal credit available for longer periods to assist in meeting seasonal needs for funds arising from a combination of expected patterns of movement in share and deposit accounts and loans; and

C. Protracted adjustment credit available in the event of unusual or emergency circumstances of a longer-term nature resulting from national, regional or local difficulties.

Short-term adjustment credit advances generally are available for maturity periods of up to 90 days. Seasonal credit advances are available for periods of up to 270 days. Seasonal credit is generally restricted to institutions that can demonstrate a pattern of recurring need. Seasonal credit advance requests must be supported by an analysis that includes at least two years of detailed seasonal flow of funds data. Protracted adjustment credit advances that are available for periods in excess of 270 days are only made when exceptional circumstances are adversely affecting an individual institution. CLF loan officers exercise considerable discretion in extending protracted adjustment credit and may consult with NCUA supervisory authorities to address any concerns over the credit union's ability to restore liquidity and remain viable. As is the case with short-term adjustment credit and seasonal credit, CLF may decline a credit union's request for protracted adjustment credit for creditworthiness reasons. It may also refer the credit union to the appropriate NCUA Regional Director for possible NCUSIF special assistance under Section 208 of the Act. 12 U.S.C. 208.

Role of the CLF

Historically, CLF advances have been intended only to help maintain financial stability for credit unions that were experiencing liquidity difficulties or expected to experience liquidity difficulties in the immediate future. In most instances, CLF makes advances when the borrower's primary sources of liquidity are inadequate, impracticable or otherwise unavailable at the time of need. CLF is prohibited by statute from making an advance the intent of which is to expand credit union portfolios. 12 U.S.C. 1795e(a)(1).

NCUA acknowledges the need for the CLF to operate in a flexible manner. While NCUA recognizes that CLF is not to be considered the ''lender of last resort'', NCUA also understands that CLF is not to be used as a conventional funding facility or standard market alternative for borrowing credit unions. Rather, NCUA's long-standing position is that the CLF was established to be used sparingly as a stabilizing agent in times when liquidity needs threaten to disrupt credit unions' ability to provide basic financial resources to their members. Accordingly, NCUA's long-held policy that the CLF is a backup liquidity provider remains unchanged.

Although CLF advances are available when appropriate, NCUA emphasizes the importance of liquidity planning and contingency funding. NCUA expects credit unions to have in place adequate programs and procedures to manage their liquidity risk. Each credit union's liquidity management program should be appropriate for the overall level of risk incurred, considering its asset size, complexity, capital adequacy, and products or services offered. Inadequate liquidity can cause disruptions in member services and diminish public confidence. It can also increase a credit union's vulnerability to other market and operational risks. The failure to understand and manage liquidity risk adequately could easily place a credit union in an unsafe and unsound financial position.

As part of normal contingency planning, credit unions are expected to develop funding plans that include credit lines that are accessible on a timely basis. This may be accomplished with a corporate credit union or other source. The appropriateness of granting a CLF advance depends on the circumstances of the credit union at the time of the liquidity need. Appropriate circumstances for seeking CLF advances may include borrowing:

- To meet an unexpected loss in shares or nonmember funds;
- To address an unexpected surge of credit demands within the credit union's membership; and
- To meet liquidity needs due to forces beyond the immediate control of the credit union such as an internal operating problem or a natural disaster.

Among other circumstances, borrowing from CLF is not appropriate:

- To take advantage of a differential between the rate of a CLF advance and the rate of alternative sources of funds known as spread arbitrage;
- To substitute CLF credit for normal, short-term, interest-sensitive shares such as certificates or money market shares; or
- to support a planned increase in loans or investment holdings or new loan product offerings.

CLF will monitor, as necessary, the frequency and duration of a credit union's CLF borrowings to make certain that the credit union is taking appropriate measures to diminish reliance on CLF advances and verify that a more serious liquidity problem does not exist. Borrowers are expected to initiate appropriate actions to restore adequate liquidity within a reasonable period of time. Facility loan officers, at their discretion, may require a borrowing credit union to prepare a liquidity restoration plan to detail the action and time required to restore its net funds position to the point where it is no longer dependent on CLF advances.

[FR Doc. 00–27362 Filed 10–24–00; 8:45 am]

BILLING CODE 7535–01–P

NATIONAL CREDIT UNION ADMINISTRATION

Notice of Change in Subject of Meeting; Sunshine Act Meeting

The National Credit Union Administration Board determined that its business required the deletion of the following item from the previously announced closed meeting (**Federal Register**, Vol. 65, No. 201, page 61364–61365, October 17, 2000) scheduled for Thursday, October 20, 2000.

2. One (1) Personnel Matter. Closed pursuant to exemptions (2) and (6).

The Board voted unanimously that agency business required that this item be removed from the closed agenda. The item has been resolved by notation vote. Earlier announcement of this change was not possible.

The previously announced items were:

1. Budget Reprogramming. Closed pursuant to exemptions (4) and (6).
2. Two (2) Personnel Matters. Closed pursuant to exemptions (2) and (6).

FOR FURTHER INFORMATION CONTACT: Becky Baker, Secretary of the Board, Telephone (703) 518–6304.

Becky Baker,

Secretary of the Board.

[FR Doc. 00–27587 Filed 10–23–00; 2:11 pm]

BILLING CODE 7535–01–M

NATIONAL INDIAN GAMING COMMISSION

Paperwork Reduction Act

AGENCY: National Indian Gaming Commission.

ACTION: Notice.

SUMMARY: The National Indian Gaming Commission (NIGC), in accordance with the Paperwork Reduction Act of 1995, intends to submit to the Office of Management and Budget (OMB) a request to review and extend approval for the following information collection activities: (1) Compliance and Enforcement under the Indian Gaming Regulatory Act (IGRA); (2) Privacy Act regulations; (3) Approval of Class II and Class III Gaming Ordinances; and (4) National Environmental Policy Act Procedures. The NIGC intends also to submit a request for reinstatement of the approval for collection of information related to its review and approval of management contracts for the operation of tribal gaming facilities. OMB previously approved this information collection requirement but the approval has expired. As to each information collection activity, the NIGC solicits public comment on: The need for the information, the practical utility of the information and whether the information is necessary for the proper performance of NIGC functions; the accuracy of the burden estimate; and ways that the NIGC might minimize this burden including the use of automated collection techniques or other forms of information technology. When providing comment, a respondent should specify the particular collection activity to which the comment pertains.

DATES AND ADDRESSES: Comments for the NIGC's evaluation of the information collection activities and its request to OMB to extend or approve the information collections must be received by December 30, 2000. Send comments to Ms. Juanita Mendoza, National Indian Gaming Commission, 1441 L Street, NW., Suite 9100, Washington, DC 20005. The NIGC regulations to which the information collections pertain are available on the NIGC website, www.nigc.gov. A copy of the NEPA procedures for the NIGC are available on request by providing a mailing address to the point of contact for questions and comments listed on the website. Both the regulations and the NEPA procedures are also available by written request to the NIGC (Attn: Ms. Juanita Mendoza), 1441 L Street NW., Suite 9100, Washington, DC, 20005, or by telephone request at (202) 632–7003. There are no toll-free numbers. All other requests for information should be submitted to Ms. Mendoza at the above address for the NIGC.

SUPPLEMENTARY INFORMATION:

Title: Compliance and Enforcement under the Indian Gaming Regulatory Act.

OMB Number: 3141–0001.

Abstract: The Indian Gaming Regulatory Act (25 U.S.C. 2701 *et seq.*) [IGRA] governs the regulation of gaming on Indian lands. Although the IGRA places primary responsibility with the tribes for regulating gaming, Section 2706 (b) of the Act directs the NIGC to monitor gaming conducted on Indian lands on a continuing basis. The IGRA authorizes the NIGC to access and inspect all papers, books and records relating to gaming conducted on Indian lands. In accordance with this statutory responsibility, 25 CFR 571.7 requires Indian gaming operations to keep permanent financial records. 25 CFR 571.12 and 571.13 require, respectively, an annual independent audit of a tribe's gaming operations and submission of this audit to the NIGC. The NIGC uses this information to fulfill its statutory responsibility to monitor Indian gaming. Section 2710 of the IGRA requires tribes to conduct background investigations on key employees and primary management officials involved in class II and class III gaming. 25 CFR 556 and 558 require tribes to perform each investigation using information such as name, address, previous employment records, previous relationships with either Indian tribes or the gaming industry, and licensing relating to those relationships, any convictions and any other information a tribe feels is relevant to the employment of the individuals being investigated. Tribes are then required to submit to the NIGC a copy of the completed employment applications and investigative reports and licensing eligibility determinations on key employees or primary management officials before issuing gaming licenses to those persons. The NIGC will use this information in conducting its review of the suitability determinations and will advise the tribe if it disagrees with any particular determination.

Estimated Burden: The reporting burden for this collection of information is estimated to be 40 hours per response for access and inspection of records, 100 hours for the preparation and submission of an annual audit, and 400 hours annually, on the average, for each tribe for submission of matters related to background information and licensing.

Respondents: Indian tribes conducting gaming operations.

Estimated Number of Respondents: 220.

Estimated Annual Responses: 30,640.

Estimated Total Annual Burden on Respondents: 127,800 hours.

Title: Privacy Act Procedures.

OMB Number: 3141–0002.

Abstract: To implement the IGRA, it is necessary for the NIGC to collect, maintain and use personal information gathered on certain individuals. Under

25 CFR §§ 556 and 558, tribes must submit to the NIGC information regarding key employees and management officials employed at a tribal gaming operation. The NIGC compiles and stores this information in a system of records. Pursuant to the Privacy Act of 1974 [5 U.S.C. 552a] agencies must promulgate regulations regarding the collection, maintenance, use and dissemination of records within a system. Under 25 CFR 515.3, individuals can request information on whether they are subject to any record. Individuals may also request access to those records and may ask the NIGC to make corrections or amendments if the information is not accurate. The NIGC will use the information submitted by the responder in making this determination.

Estimated Burden: The reporting burden for this collection of information is estimated to be 1 hour per response.

Respondents: Individuals requesting access to records.

Estimated Number of Respondents: 5.

Estimated Annual Responses: 5.

Estimated Total Annual Burden on Respondents: 5 hours.

Title: Approval of Class II and Class III Ordinances.

OMB Number: 3141–000–3.

Abstract: The IGRA establishes the National Indian Gaming Commission as an independent regulatory agency to oversee Indian gaming. The Act sets standards for the regulation of gaming including requirements for approval or disapproval of tribal gaming ordinances. IGRA section 2705(a)(3) requires the Chairman to review all class II and class III tribal gaming ordinances. In accordance with this provision, 25 CFR 552.2 of the NIGC's regulations requires tribes to submit to the NIGC: (1) A copy of the gaming ordinance to be approved, a copy of the authorizing resolution by which it was enacted by the tribal government and a request for approval of the ordinance or resolution; (2) a description of procedures the tribe will employ in conducting background investigations on key employees or primary management officials; (3) a description of procedures the tribe will use to issue licenses to primary management officials and key employees; (4) copies of all gaming regulations; (5) a copy of any applicable tribal-state compact; (6) a description of dispute resolution procedures for disputes arising between the gaming public and the tribe or management contractor; (7) identification of the law enforcement agent that will take fingerprints and a description of the procedures for conducting criminal history checks; and (8) designation of an agent for service of process. Under 25 CFR § 522.3, tribes must submit any amendment to the ordinance or resolution for approval by the Chairman. In this instance, the tribe must provide a copy of the authorizing resolution. The NIGC will use the information collected to approve or disapprove the ordinance or amendment.

Estimated Burden: The reporting burden for this collection of information is estimated to be 80 hours per response for approval of an initial gaming ordinance, and 5 hours per response for an amendment.

Respondents: Indian tribes conducting gaming operations.

Estimated Number of Respondents: 220.

Estimated Annual Responses: Initial ordinance review requests: 10; ordinance amendment review requests: 50.

Estimated Total Annual Burden on Respondents: 1,050 hours.

Title: National Environmental Policy Act Procedures.

OMB Number: 3141–006.

Abstract: The National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) was enacted to encourage a national policy of protecting, enhancing, and restoring the quality of the human environment. The Council on Environmental Quality (CEQ), established pursuant to the National Environmental Policy Act (NEPA), promulgated implementing regulations at 40 CFR 1501 *et seq.* NEPA and CEQ's regulations require every Federal agency to establish procedures and strategies that consider the environmental consequences of Federal agency actions. Under NEPA, Federal agencies are required to prepare or cause to be prepared environmental documents relating to actions by the agency that may have significant impact on the environment. The NEPA process will be triggered when a tribe and management contractor seek approval of a management contract under 25 CFR 533 which involves the construction of or significant modification to a gaming facility. NIGC procedures discuss the submission of an environmental assessment for consideration incident to that approval process. NIGC will use the environmental assessment in determining whether there is significant impact on the environment as a result of the construction or significant facility modification and may require mitigations described in the assessment to minimize any impact.

Respondents: Indian tribes seeking approval of a management contract for tribal gaming operations and/or a management contactor.

Estimated Number of Respondents: 50.

Estimated Annual Responses: 15.

Estimated Annual Burden Hours: 7,500.

Estimated Burden Hours per Response: 500.

Title: Approval of Management Contracts.

OMB Number: 3141–0004 (expired).

Abstract: Under Sections 2710(e) and 2711 of the IGRA, subject to the approval of the NIGC Chairman, an Indian tribe may enter into a management contract for the operation and management of a tribal gaming activity. In approving a management contract, by the terms of the statute, the Chairman shall require and obtain the name, address, and other pertinent background information on each person or entity having a direct financial interest in, or management responsibility for such contract, and in the case of a corporation those individuals who serve on the board of directors of such corporation and each of its stockholders who hold 10 percent or more of its shares; a description of previous experience that each person has had with other Indian gaming contracts or with the gaming industry including any gaming licenses which the person holds; and a complete financial statement of each person listed. Under 25 CFR part 533, the Chairman requires the submission of the contract with original signatures, any collateral agreements to the contract, a tribal ordinance or resolution authorizing the submission and supporting documentation, a three-year business plan which sets forth the parties' goals, objectives, budgets, financial plans, and related matters and income statements and sources and use of funds statements for the previous three years, and, for any contract exceeding five years or which includes a management fee of more than 30 percent, justification that the capital investment required and income projections for the gaming operation require the longer duration or the additional fee. Under 25 CFR part 535, the Chairman may approve a modification to a management contract or an assignment of that management contract based on information similar to that required under part 533. The part also specifies that the Chairman may void a previous management contract approval and allows the parties the opportunity to submit information relevant to that determination. 25 CFR part 537 specifies the requirements for submission of background information in amplification of the statutory requirement for obtaining information on persons and entities having a direct financial interest in or management responsibility for a management contract. Finally, 25 CFR part 539 permits appeals to the Commission from a decision of the Chairman to disapprove a management contract and allows the Indian tribe and the management company an opportunity to provide information relevant to that appeal. The NIGC will use the information collected to either approve or disapprove the contract or, in the case of an appeal, to grant or deny the appeal.

Estimated Burden: The reporting burden for this collection of information is estimated to be 500 hours per response.

Respondents: Indian tribes conducting gaming and management contractors for tribal gaming operations.

Estimated Number of Respondents: 100.

Estimated Annual Responses: 15.

Estimated Total Annual Burden on Respondents: 7,500.

Montie R. Deer,

Chairman, National Indian Gaming Commission.

[FR Doc. 00–27408 Filed 10–24–00; 8:45 am]

BILLING CODE 7565–01–P

NUCLEAR REGULATORY COMMISSION

Agency Information Collection Activities: Proposed Collection; Comment Request

AGENCY: Nuclear Regulatory Commission (NRC).

ACTION: Notice of pending NRC action to submit an information collection request to OMB and solicitation of public comment.

SUMMARY: The NRC is preparing a submittal to OMB for review of continued approval of information collections under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35).

Information pertaining to the requirement to be submitted:

1. *The title of the information collection:* 10 CFR Part 25—Access Authorization for Licensee Personnel.

2. *Current OMB approval number:* 3150–0046.

3. *How often the collection is required:* On occasion.

4. *Who is required or asked to report:* NRC-regulated facilities and other organizations requiring access to NRC-classified information.

5. *The number of annual respondents:* 20.

6. *The number of hours needed annually to complete the requirement or request:* 257 hours (197 hours reporting and 60 hours recordkeeping) or 3.8 hours per response.

7. *Abstract:* NRC-regulated facilities and other organizations are required to provide information and maintain records to ensure that an adequate level of protection is provided NRC-classified information and material.

Submit, by December 26, 2000, comments that address the following questions:

1. Is the proposed collection of information necessary for the NRC to properly perform its functions? Does the information have practical utility?

2. Is the burden estimate accurate?

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

4. How can the burden of the information collection be minimized, including the use of automated collection techniques or other forms of information technology?

A copy of the draft supporting statement may be viewed free of charge at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room O–1F23, Rockville, MD 20852. OMB clearance requests are available at the NRC worldwide web site: http://www.nrc.gov/NRC/PUBLIC/OMB/index.html. The document will be available on the NRC home page site for 60 days after the signature date of this notice.

Comments and questions about the information collection requirements may be directed to the NRC Clearance Officer, Brenda Jo. Shelton, U.S. Nuclear Regulatory Commission, T–6 E6, Washington, DC 20555–0001, by telephone at 301–415–7233, or by Internet electronic mail at BJS1@NRC.GOV.

Dated at Rockville, Maryland, this 19th day of October, 2000.

For the Nuclear Regulatory Commission.

Brenda Jo. Shelton,

NRC Clearance Officer, Office of the Chief Information Officer.

[FR Doc. 00–27385 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–U

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–269, 50–270, and 60–287]

Duke Energy Corporation; Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License Nos. DPR–38, DPR–47, and DPR–55 issued to the Duke Energy Corporation (the licensee) for operation of the Oconee Nuclear Station, Units 1, 2, and 3 located in Seneca, South Carolina.

By letter dated June 6, 2000, the Commission approved Amendment Nos. 312, 312, and 312 to add Technical Specification (TS) Surveillance Requirement 3.8.1.17 to verify operability of the Keowee Hydro Units (KHUs) out-of-tolerance logic trip and closure blockage relays associated with the overhead and underground power path breakers. The amendments specified that the TS change would be implemented by November 30, 2000.

Subsequently, by application dated October 18, 2000, the licensee submitted a proposed amendment to change the implementation date. The proposed new date would be based on an engineering study that is being conducted to evaluate the appropriate KHU OOT surveillance criteria and resolve overshoot concerns. These overshoot concerns are described in Amendment Nos. 316, 316 and 316 that were issued on October 4, 2000, which also added a note that requires an amendment, based on the results of this evaluation, be submitted by April 5, 2001.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

Pursuant to 10 CFR 50.91, Duke Power Company (Duke) has made the determination that this amendment request involves a No Significant Hazards Consideration by applying the standards established by the NRC regulations in 10 CFR 50.92. This ensures that operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

No. The License Amendment Request (LAR) involves revising the implementation date of November 30, 2000 for the Keowee Hydro Unit [KHU] out-of-tolerance [OOT] voltage and frequency modification. Revising this date will allow Duke to integrate resolution of the overshoot issues.

This LAR involves an administrative issue, rather than the inability of the KHU to perform its intended safety function. The out-of-tolerance voltage and frequency modification is considered an enhancement to the existing design. Changing the implementation date for the modification has no impact on existing plant equipment.

Revising the requirements for implementation does not involve: (1) A physical alteration to the Oconee Units; (2) operating any installed equipment in a new or different manner; or (3) a change to any set points for parameters which initiate protective or mitigative action.

There is no adverse impact on containment integrity, radiological release pathways, fuel design, filtration systems, main steam relief valve set points, or radwaste systems. No new radiological release pathways are created.

Therefore, the probability or consequence of an accident previously evaluated is not significantly increased.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

No. The LAR involves revising the implementation date for the KHU voltage and frequency OOT modification.

Delaying implementation does not involve a physical effect on the unit, nor is there any increased risk of a unit trip or reactivity excursion. No new failure modes or credible accident scenarios are postulated from this activity.

Therefore, the possibility of a new or different kind of accident from any kind of accident previously evaluated is not created.

3. Involve a significant reduction in a margin of safety.

No. The LAR involves delaying implementation of the KHU voltage and frequency OOT modification. Delaying implementation will allow Duke to fully integrate the resolution of the overshoot issues.

Delaying implementation does not involve: (1) A physical alteration of the Oconee Units; (2) the installation of new or different equipment; (3) operating any installed equipment in a new or different manner; (4) a change to any set points for parameters which initiate protective or mitigative action; or (5) any impact on the fission product barriers or safety limits.

Therefore, this request does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish in the **Federal Register** a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, and should cite the publication date and page number of this **Federal Register** notice. Written comments may also be delivered to Room 6D59, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By November 24, 2000, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's ''Rules of Practice for Domestic Licensing Proceedings'' in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and accessible electronically through the ADAMS Public Electronic Reading Room link at the NRC Web site (http://www.nrc.gov). If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, and to Anne W. Cottington, Winston and Strawn, 1200 17th Street, NW., Washington, DC 20555, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)–(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated October 18, 2000, which is available for public inspection at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and accessible electronically through the ADAMS Public Electronic Reading Room link at the NRC Web site (http://www.nrc.gov).

Dated at Rockville, Maryland, this 19th day of October 2000.

For the Nuclear Regulatory Commission.

David E. LaBarge,

Senior Project Manager, Section 1, Project Directorate II, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. 00–27381 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–313]

Entergy Operations, Inc., Arkansas Nuclear One, Unit 1; Notice of Availability of the Draft Supplement 3 to the Generic Environmental Impact Statement and Public Meeting for the License Renewal of Arkansas Nuclear One, Unit 1

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has published a draft plant-specific supplement to the Generic Environmental Impact Statement (GEIS), NUREG–1437, regarding the renewal of operating license DPR–51 for an additional 20 years of operation at the Arkansas Nuclear One, Unit 1 (ANO–1). ANO–1 is located in Pope County, Arkansas. Possible alternatives to the proposed action (license renewal) include no action and reasonable alternative energy sources.

The draft supplement to the GEIS is available electronically for public inspection in the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at *http://www.nrc.gov/NRC/ADAMS/index.html* (the Public Electronic Reading Room). In addition, the Pendergraft Library, located at Arkansas Tech University, 305 West Q Street, Russellville, AR 72801, has agreed to make the draft supplement to the GEIS available for public inspection.

Any interested party may submit comments on the draft supplement to the GEIS for consideration by the NRC staff. To be certain of consideration, comments on the draft supplement to the GEIS and the proposed action must be received by January 4, 2001. Comments received after the due date will be considered if it is practical to do so, but the NRC staff is able to assure consideration only for comments received on or before this date. Written comments on the draft supplement to the GEIS should be sent to:

Chief, Rules and Directives Branch, Division of Administrative Services, Mailstop T–6D 59, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

Comments may be hand-delivered to the NRC at 11545 Rockville Pike, Rockville, Maryland, between 7:45 a.m. and 4:15 p.m. on Federal workdays. Submittal of electronic comments may be sent by the Internet to the NRC at anoeis@nrc.gov. All comments received by the Commission, including those made by Federal, State, and local agencies, Indian tribes, or other interested persons, will be made available electronically at the Commission's Public Document Room in Rockville, Maryland or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS).

The NRC staff will hold a public meeting to present an overview of the draft plant-specific supplement to the GEIS and to accept public comments on the document. The public meeting will be held at the Holiday Inn, Russellville, Arkansas, on November 14, 2000. There will be two sessions to accommodate interested parties. The first session will commence at 1:30 p.m. and will continue until 4:30 p.m. The second session will commence at 7:00 p.m. and will continue until 10:00 p.m. Both meetings will be transcribed and will include (1) a presentation of the contents of the draft plant-specific supplement to the GEIS, and (2) the opportunity for interested government agencies, organizations, and individuals to provide comments on the draft report. Persons may pre-register to attend or present oral comments at the meeting by contacting Mr. Thomas J. Kenyon by telephone at 1–800–368–5642, extension 1120, or by Internet to the NRC at anoeis@nrc.gov no later than November 6, 2000. Members of the public may also register to provide oral comments within 15 minutes of the start of each session. Individual oral comments may be limited by the time available, depending on the number of persons who register. If special equipment or accommodations are needed to attend or present information at the public meeting, the need should be brought to Mr. Kenyon's attention no later than November 6, 2000, to provide the NRC staff adequate notice to determine whether the request can be accommodated.

FOR FURTHER INFORMATION CONTACT: Mr. Thomas J. Kenyon, Generic Issues, Environmental, Financial, and Rulemaking Branch, Division of Regulatory Improvement Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Mr. Kenyon may be contacted at the aforementioned telephone number or e-mail address.

Dated at Rockville, Maryland, this 3rd day of October, 2000.

For the Nuclear Regulatory Commission.

David B. Matthews,

Director, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation.

[FR Doc. 00–27382 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50–315 and 50–316]

Indiana Michigan Power Company; Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. DPR–58 and DPR–74 issued to Indiana Michigan Power Company for operation of the Donald C. Cook Nuclear Plant, Units 1 and 2 located in Berrien County, Michigan.

The proposed amendments would revise Technical Specification (TS) 3/4.7.1.2, ''Auxiliary Feedwater System (AFW),'' to change the description in the TS surveillance requirement for the position for each automatic valve in the system from the ''fully open'' position to the ''correct'' position.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Does the change involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated?

The proposed change does not affect any accident initiators or precursors. As such, the proposed change does not increase the probability of an accident. The proposed change does not affect the ability of the AFW system to mitigate the consequences of an accident. By ensuring the required flowrates are preserved, accident consequences are not increased.

Therefore, the probability of occurrence or consequences of accidents previously evaluated are not significantly increased.

2. Does the change create the possibility of a new or different kind of accident from any accident previously analyzed?

The proposed change does not involve a physical alteration in the AFW system or a change to the way the system is operated; however, such changes would be permitted under 10 CFR 50.59, as described above. Consequently, no new failure modes, malfunctions, or system interactions are created.

Therefore, the possibility of a new or different kind of accident from any accident previously analyzed is not created.

3. Does the change involve a significant reduction in a margin of safety?

The AFW system is used after certain accidents to remove decay heat and reduce reactor coolant system temperature to less than 350'F, when the residual heat removal system may be placed into operation. This function mitigates the consequences of an accident that could result in overpressurization of the reactor coolant pressure boundary. The proposed change does not affect the ability of the AFW system to perform this function. Future changes would be allowed via 10 CFR 50.59, as described above. Changes to the position of the automatic AFW system valves would impact AFW system flow following an accident. Requiring AFW system valves to be in the correct position ensures flow is provided in a manner consistent with the accident analyses assumptions.

The proposed change does not impact the ability of the AFW system to mitigate the consequences of an accident. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish in the **Federal Register** a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, and should cite the publication date and page number of this **Federal Register** notice. Written comments may also be delivered to Room 6D59, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, MD.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By November 24, 2000, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene.

Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's ''Rules of Practice for Domestic Licensing Proceedings'' in 10 CFR part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and accessible electronically through the ADAMS Public Electronic Reading Room link at the NRC Web site (http://www.nrc.gov). If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest.

The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; and to David W. Jenkins, Esq., 500 Circle Drive, Buchanan, MI 49107, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)–(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated October 18, 2000, which is available for public inspection at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and accessible electronically through the ADAMS Public Electronic Reading Room link at the NRC Web site (*http://www.nrc.gov*).

Dated at Rockville, Maryland, this 19th day of October 2000.

For the Nuclear Regulatory Commission.

John F. Stang,

Senior Project Manager, Section 1, Project Directorate III, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. 00–27383 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–275]

Pacific Gas and Electric Co.; Diablo Canyon Power Plant, Unit 1; Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. DPR–80, issued to Pacific Gas and Electric Company (PG&E, or the licensee), for operation of the Diablo Canyon Nuclear Power Plant, Unit 1 (DCNPP), located in San Luis Obispo County, California.

Environmental Assessment

Identification of Proposed Action

The proposed action would allow PG&E to increase the maximum reactor core power level from 3338 megawatts thermal (MWt) to 3411 MWt, which is an increase of 2.2 percent of rated core thermal power for DCNPP Unit 1.

The proposed action is in accordance with PG&E's application for amendment dated December 31, 1999, as supplemented by letters dated January 18, July 7, September 22, and September 29, 2000.

The Need for the Proposed Action

The proposed action would permit an increase in the licensed core thermal power from 3338 MWt to 3411 MWt and would provide the flexibility to increase the potential electrical output of DCNPP Unit 1.

Environmental Impacts of the Proposed Action

PG&E has submitted an environmental evaluation supporting the proposed power uprate and provided a summary of its conclusions concerning both the radiological and non-radiological environmental impacts of the proposed action. Based on the NRC's independent analyses and the evaluation performed by the licensee, the staff concludes that the proposed increase in power is not expected to result in a significant environmental impact.

Radiological Environmental Assessment

Radwaste Systems

The reactor coolant contains activated corrosion products, which are the result of metallic materials entering the water and being activated in the reactor region. Under power uprate conditions, the feedwater flow increases with power and the activation rate in the reactor region increases with power. The net result may be an increase in the activated corrosion product production. However, the total volume of processed waste is not expected to increase appreciably.

Non-condensible radioactive gas from the main condenser, along with air in-leakage, normally contains activation gases (principally N–16, O–19 and N–13) and fission product radioactive noble gases. This is the major source of radioactive gas (greater than all other sources combined). These non-condensible gases, along with non-radioactive air, are continuously removed from the main condensers which discharge into the offgas system. The gaseous effluents will remain within the original limits following implementation of the power uprate.

PG&E has concluded that the operation of the radwaste systems at DCNPP will not be impacted by operation at uprated power conditions and the slight increase in effluents discharged would continue to meet the requirements of Part 20 of Title 10 of the Code of Federal Regulations (10 CFR) and 10 CFR part 50, appendix I. Therefore, the power uprate will not appreciably affect the licensee's ability to process liquid or gaseous radioactive effluents and there are no significant environmental effects from radiological releases.

Dose Consideration

PG&E evaluated the effects of power uprate on the radiation sources within the plant and radiation levels during normal and post-accident conditions. Post-operation radiation levels in most areas of the plant are expected to increase by no more than the percentage increase in power level. In a few areas near the spent fuel pool cooling system piping and the reactor water piping, where accumulation of corrosion product crud is expected, as well as near some liquid radwaste equipment, the increase could be slightly higher. In this regard, procedural controls are expected to compensate for increased radiation levels. Occupational doses for normal operations will be maintained within acceptable limits by the site's as-low-as-reasonably-achievable program, which is required by 10 CFR 20.1101(b).

The power uprate would not involve significant increases in offsite doses to the public from noble gases, airborne particulates, iodine, tritium, or liquid effluents. A review of the normal radiological effluent doses shows that, at the current power level, doses are less than one percent of the doses allowed by the plant's technical specifications (TS). Present offsite radiation levels are a negligible portion of background radiation. Therefore, the normal offsite doses would not be significantly affected by operation at the uprated power level and would remain below the limits of 10 CFR part 20 and 10 CFR part 50, appendix I.

The change in core inventory that would result from the power uprate is expected to increase post-accident radiation levels by no more than the percentage increase in power level. The licensee reanalyzed the large break loss-of-coolant accident (LOCA), the small break LOCA, the overtemperature and overpressure ΔT (OTΔT/OPΔT) setpoint calculation, and the accidental reactor coolant system (RCS) depressurization event. The residual heat removal (RHR) cooldown calculation and main steam line break at full power were also reanalyzed as part of the uprate project. The slight increase expected in the post-accident radiation levels would have no significant effect on the plant nor on the habitability of the control room envelope, the Emergency Operations Facility, or the Technical Support Center. Thus, the licensee has determined that access to areas requiring post-accident occupancy would not be significantly affected by the power uprate. The licensee evaluated the whole body and thyroid doses at the exclusion area boundary that might result from the postulated design basis LOCA and determined that expected doses remain below established regulatory limits. Therefore, the results of the radiological analyses remain below the 10 CFR Part 100 guidelines and all radiological safety margins would be maintained if the amendment were granted.

Summary

The proposed power uprate would not significantly increase the probability or consequences of accidents, would not involve any new radiological release pathways or would not result in a significant increase in occupational or public radiation exposure, and would not result in significant additional fuel cycle environmental impacts. Accordingly, the NRC staff concludes that there are no significant radiological environmental impacts associated with the proposed action.

Non-Radiological Environmental Assessment

The licensee reviewed the non-radiological environmental impacts of the requested power uprate based on information submitted in the Environmental Report, Operating License Stage, the NRC Final Environmental Statement (FES), and the requirements of the Environmental Protection Plan. Based on this review, the licensee concluded that the proposed power uprate would have no significant effect on the non-radiological elements of concern and the plant will be operated in an environmentally acceptable manner as established by the FES. In addition, the licensee states that existing Federal, State, and local regulatory permits presently in effect accommodate the power uprate without modification.

The cooling water systems at DCNPP (*e.g.,* circulating water and auxiliary saltwater systems) are drawn from the ultimate heatsink, Diablo Cove, part of the Pacific Ocean. DCNPP has determined that the power uprate would not cause any change to the DCNPP Environmental Protection Plan, however, it would reduce the margin between DCNPP performance and the allowable heat rejection to the Pacific Ocean. The licensee is allowed a maximum of 22 °F between the cooling water intake and outflow between the two units. The outflows of both units mix together, therefore a 2.2 percent uprate of DCNPP Unit 1 will tend to increase the temperature change by 1.1 percent, or approximately 0.2 °F.

DCNPP operates in compliance with a National Pollution Discharge Elimination System (NPDES) Permit, which requires all effluents to be closely monitored to assure compliance with the permit levels. DCNPP does not expect any effluent increases due to the power uprate of DCNPP Unit 1. With regards to potential non-radiological impacts, the proposed action would not change the method of operation at DCNPP or the methods of handling effluents. No changes to land use would result and the proposed action does not involve any historic sites. Therefore, no new or different types of non-radiological environmental impacts are expected. Accordingly, the NRC concludes that there are no significant non-radiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action

As an alternative to the proposed action, the staff considered denial of the proposed action (*i.e.,* the ''no-action'' alternative). Denial of the application would result in no change in current environmental impacts, but would reduce the operational flexibility that would be afforded by the proposed change. The environmental impacts of the proposed action and the alternative action are not significantly different.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the FES for DCNPP.

Agencies and Persons Consulted

In accordance with its stated policy, on October 3, 2000, the staff consulted with the California State official, Mr. Steve Hsu, of the Radiologic Health Branch of the State Department of Health Services, regarding the environmental impact of the proposed action. The State official had no comments.

Finding of no Significant Impact

Based upon the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated December 31, 1999, as supplemented by letters dated January 18, July 7, September 22, and September 29, 2000, which may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site (the Electronic Reading Room).

Dated at Rockville, Maryland this 19th day of October 2000.

For the Nuclear Regulatory Commission.

Stephen Dembek,

Chief, Section 2, Project Directorate IV & Decommissioning, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. 00–27384 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards; Meeting of the ACRS Subcommittee on Materials and Metallurgy

Notice of Meeting

The ACRS Subcommittee on Materials and Metallurgy will hold a meeting on November 16, 2000, Room T–2B3, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

Thursday, November 16, 2000–8:30 a.m. until 12 Noon

The Subcommittee will discuss the proposed draft regulatory guide DG–1053, ''Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence.'' The purpose of this meeting is to gather information, analyze relevant issues and facts, and to formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Electronic recordings will be permitted only during those portions of the meeting that are open to the public, and questions may be asked only by members of the Subcommittee, its consultants, and staff. Persons desiring to make oral statements should notify the cognizant ACRS staff engineer named below five days prior to the meeting, if possible, so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC staff and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been canceled or rescheduled, and the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor, can be obtained by contacting the cognizant ACRS staff engineer, Mr. Noel F. Dudley (telephone 301/415–6888) between 7:30 a.m. and 4:15 p.m. (EDT). Persons planning to attend this meeting are urged to contact the above named individual one or two working days prior to the meeting to be advised of any potential changes to the agenda, etc., that may have occurred.

Dated: October 19, 2000.

James E. Lyons,

Associate Director for Technical Support, ACRS/ACNW.

[FR Doc. 00–27444 Filed 10–24–00; 8:45 am]

BILLING CODE 7590–01–P

OFFICE OF PERSONNEL MANAGEMENT

Submission for OMB Review; Comment Request for Review Of a Revised Information Collection: Instructions and Model CFC Application

AGENCY: Office of Personnel Management.

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (Pub. L. 104–13, May 22, 1995), this notice announces that the Office of Personnel Management has submitted to the Office of Management and Budget a request for clearance of a revised information collection. The model Combined Federal Campaign application and instructions is used to collect information from charitable organizations applying for eligibility.

We estimate 1400 Applications are completed annually. Each form takes approximately 3 hours to complete. The annual estimated burden is 4200 hours.

Comments are particularly invited on:

• Whether this collection of information is necessary for the proper performance of functions of the Office of

Personnel Management, and whether it will have practical utility;

• Whether our estimate of the public burden of this collection is accurate, and based on valid assumptions and methodology; and

• Ways in which we can minimize the burden of the collection of information on those who are to respond, through use of the appropriate technological collection techniques or other forms of information technology.

For copies of this proposal, contact Mary Beth Smith-Toomey on 202/606–8358, or E-mail to mbtoomey@opm.gov.

Comments on this proposal should be received within 10 calendar days from the date of this publication.

ADDRESSES: Send or deliver comments to:

Mara T. Patermaster, Office of Extragovernmental Affairs, CFC Operations, US Office of Personnel Management, 1900 ''E'' Street, NW, Room 5450, Washington, DC 20415 and

Joseph Lackey, OPM Desk Officer, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, NW, Room 10235, Washington, DC 20503.

Office of Personnel Management.

Janice R. Lachance,

Director.

[FR Doc. 00–27326 Filed 10–24–00; 8:45 am]

BILLING CODE 6325–01–P

OFFICE OF PERSONNEL MANAGEMENT

Excepted Service

AGENCY: Office of Personnel Management.

ACTION: Notice.

SUMMARY: This gives notice of positions placed or revoked under Schedules placed under Schedule C in the excepted service, as required by Civil Service Rule VI, Exceptions from the Competitive Service.

FOR FURTHER INFORMATION CONTACT: Pam Shivery, Director, Washington Service Center, Employment Service (202) 606–1015.

SUPPLEMENTARY INFORMATION: The Office of Personnel Management published its last monthly notice updating appointing authorities established or revoked under the Expected Service provisions of 5 CFR part 213 October 10, 2000 (65 FR 60226). Individual authorities established or revoked under Schedule C between September 1, 2000, and September 30, 2000, appear in the listing below. Future notices will be published on the fourth Tuesday of each month, or as soon as possible thereafter. A consolidated listing of all authorities as of June 30 will also be published.

Schedule C

The following Schedule C authorities were established during September 2000:

Department of Agriculture

Staff Assistant to the Director, Office of Communications. Effective September 12, 2000.

Special Assistant to the Administrator, Agricultural Marketing Service. Effective September 21, 2000.

Staff Assistant to the Confidential Assistant, Office of the Secretary. Effective September 26, 2000.

Staff Assistant to the Administrator, Foreign Agriculture Service. Effective September 26, 2000.

Department of Commerce

Confidential Assistant to the Executive Assistant to the Secretary. Effective September 12, 2000.

Department of Defense

Staff Specialist to the Deputy Under Secretary of Defense (Environmental Secretary). Effective September 7, 2000.

Defense Fellow to the Special Assistant to the Secretary of Defense for White House Liaison. Effective September 20, 2000.

Department of Education

Confidential Assistant to the Senior Advisor to the Secretary. Effective September 7, 2000.

Confidential Assistant to the Assistant Secretary for Legislation and Congressional Affairs. Effective September 12, 2000.

Department of Energy

Special Assistant to the Director, Office of Management and Administration. Effective September 7, 2000.

Director, Office of Nuclear Materials Management Policy to the Director of Policy. Effective September 7, 2000.

Special Assistant to the Deputy Assistant Secretary for Natural Gas and Petroleum Technology. Effective September 28, 2000.

Deputy Director, Office of Scheduling and Advance to the Director, Office of Scheduling and Advance. Effective September 28, 2000.

Department of Housing and Urban Development

Staff Assistant to the Deputy Assistant Secretary for Congressional and Intergovernmental Relations. Effective September 7, 2000.

Special Assistant to the Deputy Assistant Secretary for Congressional Relations, Office of the Assistant Secretary for Congressional Relations. Effective September 12, 2000.

Special Assistant to the Advisor for Management Reform and Operations. Effective September 18, 2000.

Special Assistant to the Director, Office of Executive Scheduling. Effective September 25, 2000.

Security/Advance Coordinator to the Director, Office of Executive Scheduling. Effective September 28, 2000.

Department of Justice

Staff Assistant to the Assistant Attorney General, Criminal Division. Effective September 7, 2000.

Department of State

Special Assistant to the Assistant Secretary for Oceans and International Environmental and Scientific Affairs. Effective September 12, 2000.

Legislative Management Officer to the Assistant Secretary, Bureau of Legislative Affairs. Effective September 25, 2000.

Department of Transportation

Director, Office of Public Affairs to the Administrator, Federal Railroad Administration. Effective September 5, 2000.

Special Assistant to the Associate Director for Media Relations and Special Projects. Effective September 12, 2000.

Special Assistant to the Maritime Administrator. Effective September 20, 2000.

Farm Credit Administration

Congressional and Public Affairs Specialist to the Director, Office of Congressional and Public Affairs. Effective September 25, 2000.

National Endowment for the Humanities

Director of Governmental Affairs to the Chief of Staff. Effective September 19, 2000.

Small Business Administration

Confidential Advisor to the Deputy Administrator. Effective September 25, 2000.

Senior Director of Scheduling and Advance to the Chief of Staff. Effective September 25, 2000.

Associate Director for Field Operations to the Associate Administrator for Field Operations. Effective September 26, 2000.

Authority: 5 U.S.C. 3301 and 3302; E.O. 10577, 3 CFR 1954–1958 Comp., P.218.

Office of Personnel Management.

Janice R. Lachance,

Director.

[FR Doc. 00–27327 Filed 10–24–00; 8:45 am]

BILLING CODE 6325–01–M

OFFICE OF PERSONNEL MANAGEMENT

Privacy Act of 1974; Computer Matching Program, Office of Personnel Management/Social Security Administration

AGENCY: Office of Personnel Management (OPM).

ACTION: Publication of notice of computer matching program to comply with Public Law 100–503, the Computer Matching and Privacy Protection Act of 1988.

SUMMARY: OPM is publishing notice of its computer matching program with the Social Security Administration (SSA) to meet the reporting and publication requirements of Public Law 100–503. The purpose of the computer match is to establish the conditions under which SSA agrees to the disclosure of tax return information to OPM.

DATES: The matching program will begin in October 2000, or 40 days after agreements by the parties participating in the match have been submitted to Congress and the Office of Management and Budget, or 30 days after notice of the match is published in the **Federal Register**, whichever is later. The data exchange will begin at a date mutually acceptable between OPM and SSA, unless comments are received which will result in a contrary determination. Subsequent matches will take place annually on a recurring basis until one of the parties advises the other, in writing, of its intention to reevaluate, modify and/or terminate the agreement.

ADDRESSES: Comments may be sent to William J. Washington, Acting Assistant Director for Systems, Finance, and Administration, 1900 E. Street, NW., Room 4312, Washington, DC 20415.

FOR FURTHER INFORMATION CONTACT: Marc Flaster, (202) 606–2115.

SUPPLEMENTARY INFORMATION: OPM and SSA intend to conduct a computer matching program, as described below. The purpose of this agreement is to establish the conditions under which SSA agrees to the disclosure of tax return information to OPM. The SSA records will be used in a matching program in which OPM will match SSA's tax return records with OPM's records on disability retirees under age 60, disabled adult child survivors, certain retirees in receipt of a supplemental benefit under the Federal Employees Retirement System, and certain annuitants receiving a discontinued service retirement benefit under the Civil Service Retirement System. By law, these annuitants and survivors are limited in the amount they can earn and still retain benefits paid to them. In the case of the discontinued service annuitants, retirement benefits will cease upon re-employment in federal service. OPM will use the SSA data to determine continued eligibility for benefits being paid.

Office of Personnel Management.

Janice R. Lachance,

Director.

Report of Computer Matching Program Between the Office of Personnel Management and the Social Security Administration

A. Participating Agencies

OPM and SSA.

B. Purpose of the Matching Program

Chapters 83 and 84 of title 5, United States Code (U.S.C.) require OPM to verify earnings data supplied by civil service annuitants. Section 6103(11) of the Internal Revenue Code requires SSA to disclose tax return information to OPM to administer programs under chapters 83 and 84 of title 5, United States Code. The purpose of this agreement is to establish the conditions under which SSA agrees to the disclosure of tax return information to OPM.

C. Authority for Conducting the Matching Program

Public Law 97–253, Chapters 83 and 84, title 5, United States Code and 26 U.S.C. 6103(11).

D. Categories of Records and Individuals Covered by the Match

The SSA records involved in the match are earnings, self-employment and other data which constitute tax return information pursuant to 26 U.S.C. 6103. The Earnings Recording and Self-Employment Income System, SSA/OSR, 60–0059 (last published in the **Federal Register** at 59 FR 62407, December 5, 1994), maintains records of individuals' wages or self-employment income from employment under Social Security. The OPM records consist of annuity data from its system of records entitled OPM/Central 1—Civil Service Retirement and Insurance Records (last published in the **Federal Register** at 64 FR 54930, October 8, 1999), as amended May 3, 2000 (65 FR 25775).

E. Description of Matching Program

OPM provides an annual electronic finder file containing identifying information for those records that SSA will verify. SSA will then provide an electronic reply file containing information in response to OPM's finder file.

F. Privacy Safeguards and Security

The personal privacy of the individuals whose names are included in the data exchange is protected by strict adherence to the provisions of the Privacy Act and OMB's ''Guidance Interpreting the Provisions of Public Law 100–503, the Computer Matching and Privacy Protection Act of 1988''. Access to the records used in the data exchange is restricted to only those authorized employees and officials who need it to perform their official duties in connection with the uses of the information authorized in this agreement. Records matched or created will be stored in an area that is physically safe. Records used in the exchange and any records created by this exchange will be processed under the immediate supervision and control of authorized personnel in a manner which will protect the confidentiality of the records, and in such a way that unauthorized persons cannot retrieve any such records by means of computer, remote terminal or other means. The records matched and any records created by this agreement will be transported under appropriate safeguards consistent with the manner in which they are stored and processed. All personnel who will have access to the records matched and to any records created by the match will be advised of the confidential nature of the information, the safeguards required to protect the information and the civil and criminal sanctions for noncompliance contained in applicable federal laws.

G. Inclusive Dates of the Matching Program

This computer matching program is subject to review by the Congress and the Office of Management and Budget (OMB). OPM's report to these parties must be received at least 40 days prior to the initiation of any matching activity. If no objections are raised by either Congress or OMB, and the mandatory 30 day public notice period for comment for this **Federal Register** notice expires, with no significant receipt of adverse public comments resulting in a contrary determination, then this computer matching program becomes effective. By agreement between OPM and SSA, the matching program will be in effect and continue for 18 months with an option to renew for 12 additional months under the terms set forth in 5 U.S.C. 552a(o)(2)(D).

[FR Doc. 00–27328 Filed 10–24–00; 8:45 am]

BILLING CODE 6325–01–P

DEPARTMENT OF STATE

[Public Notice No. 3444]

Uncitral Working Group On Arbitration: Possible New Uniform Rules On Written Form for Arbitration Agreement, Interim Measures of Protection, Mediation and Councilation; Meeting Notice

AGENCY: Department of State.

ACTION: The Arbitration and ADR Study Group of the Department's Advisory Committee on Private International Law will hold a meeting in Washington, DC at the Department of State on Thursday, November 9, 2000, from 9:30 am to 1:00 pm. The subject will be to provide advice to the U.S. delegation to the next meeting of the UNCITRAL Working Group on Arbitration.

Agenda

The meeting will consider the Report of the Secretary-General of UNCITRAL on ''Possible Uniform Rules on Certain Issues Concerning Settlement of Commercial Disputes: Written Form for Arbitration Agreement, Interim Measures of Protection, Conciliation.'' This document (no. A/CN/WG.II/WP.110) may be found at the UNCITRAL web page: *www.uncitral.org.* To find it, click on ''Preparatory Documents,'' then on ''Working Group on Arbitration,'' then on ''33rd Session.'' Depending on the time available, the meeting will also consider the Report of the Secretary-General of UNCITRAL on ''Possible Future Work: Court-Ordered Interim Measures of Protection in Support of Arbitration, Scope of Interim Measures that may be Ordered by Arbitral Tribunals, Validity of the Agreement to Arbitrate.'' This document (no. A/CN/WG.II/WP.111) may also be found at the same location on the UNCITRAL website.

Background

In response to requests from arbitration and mediation experts around the world, United Nations Commission on International Trade Law (UNCITRAL) has reestablished its Working Group on Arbitration. The Working Group has been charged with considering a number of pressing issues involving application and interpretation of the 1958 New York Convention on the Enforcement of Foreign Arbitral Awards and the UNCITRAL Model Law and Rules on Commercial Arbitration. These issues include the requirement of written form for arbitral agreements under Article 2 of the Convention, about which U.S. courts have taken different approaches, and the desirability of preparing model provisions on the enforcement of interim measures of protection. In addition, the Working Group is charged with considering the desirability of drafting a new UNCITRAL Model Law on Conciliation to pair with the UNCITRAL Conciliation Rules. (Note that the New York Convention and the UNCITRAL Model texts may all be found on the UNCITRAL website.)

The Working Group met in March 2000 and agreed in principle to begin to draft a Model Law on Conciliation, as well as consider the preparation of legal texts in the areas of the written form for arbitration agreements and interim measures of protection. The UNCITRAL Secretariat has now prepared the Report described above with proposals in these areas (Doc. No. A/CN/WG.II/WP.110).

In addition, the UNCITRAL Secretariat has prepared some preliminary background analysis on a number of additional topics that could form the basis for future consideration by the Working Group (Doc. No. A/CN/WG.II/WP.111). These proposals involve aspects of the use of court-ordered interim measures of protection, the scope of interim measures that may be issued by arbitrators, and the validity of agreements to arbitrate.

Attendance

The meeting will be held from 9:30 am to 1 pm in Conference Room 1105 at the Department of State, 2201 C St., NW., Washington, DC, and is open to the public. Because of security requirements for entering the building, persons wishing to attend must contact Ms. Rosie Gonzales, Office of the Legal Adviser, at 202–776–8420, fax 202–776–8482, email < gonzaler@ms.state.gov > no later than Monday November 6. Persons wishing to attend should provide Ms. Gonzales with their name, date of birth, and social security number. Copies of the pertinent documents may be found free of charge on the UNCITRAL website as indicated above, or will be provided free of charge by contacting Ms. Gonzales at the above numbers.

Persons not able to attend may provide written comments to Mr. Jeffrey Kovar at the following address: 2430 E St., NW., South Bldg., Suite 203, Washington, DC 20037–2851.

Jeffrey D. Kovar,

Assistant Legal Adviser for Private International Law, Department of State.

[FR Doc. 00–27430 Filed 10–24–00; 8:45 am]

BILLING CODE 4710–08–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Acceptance of Noise Exposure Maps for Phoenix Sky Harbor International Airport, Phoenix, AZ

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice.

SUMMARY: The Federal Aviation Administration (FAA) announces its determination that the Noise Exposure Maps submitted by the City of Phoenix for the Phoenix Sky Harbor International Airport, Phoenix, Arizona under the provisions of Title I of the Aviation Safety and Noise Abatement Act of 1979 (Public Law 96–193) and Title 14, Code of Federal Regulations (CFR), Part 150, are in compliance with applicable requirements.

EFFECTIVE DATES: The effective date of the FAA's acceptance of the Noise Exposure Maps for the Phoenix Sky Harbor International Airport, Phoenix, Arizona is October 10, 2000.

FOR FURTHER INFORMATION CONTACT: Brian Armstrong, Airport Planner, Airports Division, AWP–611.1, Federal Aviation Administration, Western-Pacific Region. Mailing Address: P.O. Box 92007, Worldway Postal Center, Los Angeles, California 90009–2007. Telephone (310) 725–3614. Street address: 15000 Aviation Boulevard, Hawthorne, California 90261. Documents reflecting this FAA action may be reviewed at this same location.

SUPPLEMENTARY INFORMATION: This notice announces that the FAA finds that the Noise Exposure Maps submitted for the Phoenix Sky Harbor International Airport, Phoenix, Arizona are in compliance with applicable requirements of Federal Aviation Regulation (FAR) Part 150, effective October 10, 2000.

Under Section 103 of the Aviation Safety and Noise Abatement Act of 1979 (hereinafter referred to as ''the Act''), an airport operator may submit to the FAA Noise Exposure Maps which meet applicable regulations and which depict noncompatible land uses as of the date of submission of such maps, a description of projected aircraft operation, and the ways in which such operations will affect such maps. The Act requires such maps to be developed in consultation with interested and affected parties in the local community, government agencies, and persons using the airport.

An airport operator who has submitted Noise Exposure Maps that are found by FAA to be in compliance with the requirements of FAR Part 150, promulgated pursuant to Title I of the Act, may submit a Noise Compatibility Program for FAA approval which sets forth the measures the operator has taken or proposes for the reduction of existing noncompatible uses and for the prevention of the introduction of additional noncompatible uses.

The FAA has completed its review of the Noise Exposure Map and supporting documentation submitted by the city of Phoenix. The specific maps under consideration are Exhibit 1, ''1999 Noise Exposure Map'' and Exhibit 2, ''2004 Noise Exposure Map'' in the submission. The FAA has determined that these maps for the Phoenix Sky Harbor International Airport are in compliance with applicable requirements. This determination is effective on October 10, 2000. FAA's acceptance of an airport operator's Noise Exposure Maps is limited to a finding that the maps were developed in accordance with the procedures contained in Appendix (A) of FAR Part 150. Such acceptance does not constitute approval of the applicant's data, information or plans, or a commitment to approve a Noise Compatibility Program or to fund the implementation of that program.

If questions arise concerning the precise relationship of specific properties to noise exposure contours depicted on a Noise Exposure Map, submitted under Section 103 of the Act, it should be noted that the FAA is not involved in any way in determining the relative locations of specific properties with regard to the depicted noise contours, or in interpreting the Noise Exposure Maps to resolve questions concerning, for example, which properties should be covered by the provisions of Section 107 of the Act. These functions are inseparable from the ultimate land use control and planning responsibilities of local government. These local responsibilities are not changed in any way under FAR Part 150 through FAA's review of the Noise Exposure Maps. Therefore, the responsibility for the detailed overlaying of noise exposure contours onto the map depicting properties on the surface rests exclusively with the airport operator which submitted those maps, or with those public agencies and planning agencies with which consultation is required under Section 103 of the Act. The FAA has relied on the certification by the airport operator, under Section 150.21 of FAR Part 150, that the statutorily required consultation has been accomplished.

Copies of the Noise Exposure Maps and of the FAA's evaluation of the maps are available for examination at the following locations:

Federal Aviation Administration, 800 Independence Avenue, SW., Room 617, Washington, DC 20591;
Federal Aviation Administration, Western-Pacific Region, Airports Division, AWP–600, 15000 Aviation Boulevard, Hawthorne, CA 90261; and
City of Phoenix, Aviation Department, 3400 Sky Harbor Boulevard, Phoenix, AZ 85034.

Questions may be directed to the individual named above under the heading **FOR FURTHER INFORMATION CONTACT.**

Issued in Hawthorne, California on October 10, 2000.

Herman C. Bliss,

Manager, Airports Division, AWP–600, Western-Pacific Region.

[FR Doc. 00–27334 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Aviation Rulemaking Advisory Committee Transport Airplanes and Engine Issues—New Tasks

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of new task assignment(s) for the Aviation Rulemaking Advisory Committee (ARAC).

SUMMARY: Notice is given of new tasks assigned to and accepted by the Aviation Rulemaking Advisory Committee (ARAC). This notice informs the public of the activities of ARAC.

FOR FURTHER INFORMATION CONTACT: Dorenda Baker, 601 Lind Ave., Renton, Washington 98055–4056, 425–227–2109, dorenda.baker@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA has established an Aviation Rulemaking Advisory Committee to provide advice and recommendations to the FAA Administrator, through the Associate Administrator for Regulation and Certification, on the full range of the FAA's rulemaking activities with respect to aviation-related issues. This includes obtaining advice and recommendations on the FAA's commitment to harmonize title 14 of the Code of Federal Regulations (14 CFR) with its partners in Europe and Canada.

The Task

This notice is to inform the public that the FAA has asked ARAC to provide advice and recommendation on the following harmonization task:

Task: Review 14 CFR 25.365(d), in particular the factors applied to the maximum relief value setting, which is used to set a limit structural design loan. Review FAA and Joint Aviation Authority (JAA) advisory material and paragraph 8 of Advisory Circular 25–20. In light of this review, develop a report recommending changes to harmonize this section and the corresponding JAR paragraph, recommending new harmonized standards, and develop related or revised advisory material as necessary.

Schedule: The report and advisory material shall be submitted to the FAA within 18 months after the date of this notice.

ARAC Acceptance of Tasks

ARAC has accepted the tasks and has chosen to assign the tasks to the General Structures Harmonization Working Group of the ARAC Transport Airplanes and Engine Issues group. The working group will serve as staff to ARAC to assist in the analysis of the assigned tasks. Working group recommendations must be reviewed and approved by ARAC. If ARAC accepts the working group's recommendations, it forwards them to the FAA as ARAC recommendations.

Working Group Activity

The General Structures Harmonization Working Group is expected to comply with the procedures adopted by ARAC. As part of the procedures, the working group is expected to:

1. Recommend a work plan for completion of the task, including the rationale supporting such a plan, for consideration at the meeting of the ARAC Transport Airplane and Engines issues held following publication of this notice.

2. Give a detailed conceptual presentation of the proposed recommendations, prior to proceeding with the work stated in item 3 below.

3. Draft appropriate documents with supporting economic and other required analyses, and/or any other related guidance material or collateral

documents the working group determines to be appropriate; or, if new or revised requirements or compliance methods are not recommended, a draft report stating the rationale for not making such recommendations.

4. Provide a status report at each meeting of the ARAC held to consider Transport Airplane and Engine issues.

The Secretary of Transportation has determined that the formation and use of the ARAC are necessary and in the public interest in connection with the performance of duties imposed on the FAA by law.

Meetings of the ARAC will be open to the public. Meetings of the General Structures Harmonization Working Group will not be open to the public, except to the extent that individuals with an interest and expertise are selected to participate. No public announcement of working group meetings will be made.

Issued in Washington, DC, on October 18, 2000.

Anthony F. Fazio,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 00–27332 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Harmonization Initiatives

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of public meeting.

SUMMARY: The Federal Aviation Administration and the Joint Aviation Authorities will convene a meeting to accept input from the public on the Harmonization Work Program. The Harmonization Work Program is the means by which the Federal Aviation Administration and the Joint Aviation Authorities carry out a commitment to harmonize, to the maximum extent possible, the rules regarding the certification, operation and maintenance of civil aircraft, and the standards, practices, and procedures governing the design, materials, workmanship, and construction of civil aircraft, aircraft engines, and other components. The purpose of the meeting is to provide an opportunity for the public to submit input to the Harmonization Work Program. This notice announces the date, time, location and procedures for the public meeting.

DATES: The public meeting will be held on November 28 and November 30, 2000, starting at 10:30 a.m. each day. Industry comments, presentations and proposals must be received on or before November 10, 2000.

ADDRESSES: The public meeting will be held at the Latham Hotel, 3000 M Street, NW., Washington, DC, 20007.

Persons unable to attend the meeting may mail their comments in triplicate to: Brenda Courtney, Federal Aviation Administration, Office of Rulemaking (ARM–200), 800 Independence Avenue, SW., Washington, DC 20591. You may also submit your comments to Brenda Courtney by e-mail: *brenda.courtney@faa.gov* or by facsimile at (202) 267–5075.

FOR FURTHER INFORMATION CONTACT: Requests to attend and present a statement at the meeting or questions regarding the logistics of the meeting should be directed to Brenda Courtney, Office of Rulemaking, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 267–3327, e-mail: *brenda.courtney@faa.gov;* or facsimile at (202) 267–3327.

SUPPLEMENTARY INFORMATION: Federal Aviation Administration (FAA) and the Joint Aviation Authorities (JAA) will convene a meeting to accept input from the public on the Harmonization Work Program. The meeting will be held on November 28 and November 30, 2000, at the Latham Hotel, 3000 M Street, NW., Washington, DC beginning at 10:30 a.m. each day. The agenda will include:

November 28, 2000

- Review of Action Items from the March 2000 Public Meeting
- Review of Action Items from the FAA/JAA 17th Annual Conference
- Presentations from the Public

Nobember 30, 2000

- FAA, JAA and Transport Canada News of Interest
- General Session—Response to Industry Issues and Concerns

The Latham Hotel is located in the Georgetown area of Washington, DC. It is approximately 6 blocks from the Foggy Bottom/George Washington University Metrorail Stop (blue/orange lines). The hotel is approximately 6 miles from Washington Reagan National Airport, 25 miles from Dulles International Airport, and 40 miles from Baltimore/Washington International Airport. Parking is available for $20 per night for individuals who will be lodging at the hotel. For those individuals who plan to attend the meeting, but will not stay at the hotel, parking at the hotel will be $10 per day.

For hotel reservations at the Latham Hotel, please call (202) 726–5000 or 1–800–368–5922. Conference attendees should advise the hotel that you plan to attend the ''FAA/JAA Harmonization Meeting''. The corporate rate offered for those attending the meeting is $129 plus 14½ percent sales tax or $147.71 per night for a single room. An additional $20 will be charged for double occupancy. Note that there is a 24-hour cancellation policy. The hotel will hold a block of rooms at this rate until October 26.

Participation at the Meeting

The FAA should receive requests from persons who wish to present oral and written statements at the public meeting no later than November 10, 2000. Statements and presentations should be provided on diskette or forwarded by e-mail to the person identified under the caption **FOR FURTHER INFORMATION CONTACT** to be made part of the official minutes of the meeting. Requests to present oral statements received after November 10 will be scheduled if time is available during the meeting.

Meeting Procedures

The following procedures are established to facilitate the meeting:

(1) There will be no admission fee or other charge to attend or to participate in the meeting. The meeting will be open to all persons who have requested in advance to present statements or who register on the day of the meeting, subject to availability of space in the meeting room.

(2) The meeting may adjourn early if scheduled speakers complete their statements in less than the time scheduled for the meeting.

(3) The FAA will try to accommodate all speakers. If the available time does not permit this, speakers generally will be scheduled on a first-come-first-served basis. However, the FAA reserves the right to exclude some speakers if necessary to present a balance of viewpoints and issues.

(4) Sign and oral interpretation can be made available at the meeting, as well as an assistive listening device, if requested at the above number listed under **FOR FURTHER INFORMATION CONTACT** at least 10 calendar days before the meeting.

(5) Representatives from FAA and JAA will preside over the meeting.

(6) The FAA and JAA will review and consider all material presented by participants at the meeting. Position papers or material presenting views or information related to proposed harmonization initiatives may be accepted at the discretion of the FAA and JAA. The FAA requests that persons participating in the meeting provide copies of all materials to be presented.

Copies may be provided to the audience at the discretion of the participant.

(7) Statements made by the FAA and JAA are intended to facilitate discussion of issues or to clarify issues. Any statement made during the meeting by an official is not intended to be, and should not be construed as, a position of the FAA or JAA.

(8) The meeting is designed to solicit public views and more complete information on proposed harmonization initiatives. Therefore, the meeting will be conducted in an informal and nonadversarial manner. No individual will be subject to cross-examination by any other participant; however, panel members may ask questions to clarify a statement and to ensure a complete and accurate record.

Issued in Washington, DC, on October 18, 2000.

Brenda D. Courtney,

Manager, Aircraft and Airport Rules Division.

[FR Doc. 00–27333 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

Petition for Waiver of Compliance

In accordance with part 211 of Title 49 Code of Federal Regulations (CFR), notice is hereby given that the Federal Railroad Administration (FRA) received a request for a waiver of compliance from certain requirements of its safety regulations. The individual petition is described below including, the party seeking relief, the regulatory provisions involved, the nature of the relief being requested, and the petitioner's arguments in favour of relief.

Texas Parks and Wildlife

[Docket Number FRA–2000–7270]

Texas Parks and Wildlife (TPW) seeks a permanent waiver of compliance from 49 CFR 232.17(b)(2) to extend the clean, oil, test, and stencil (COT&S) period from 15 to 48 months on passenger cars they operate equipped with UC and L type air brakes. TPW operates the Texas State Railroad between Rusk and Palestine, Texas. They have two cars equipped with L type brakes and the rest have UC type brakes. Section 232.17(b)(2) requires that brake equipment on passenger cars must be clean, repaired, lubricated and tested as often as necessary to maintain it in a safe and suitable condition for service but not less frequently than as required in Standard S–045 in the Manual of Standards and Recommended Practices of the Association of American Railroads. Standard S–045, A-III–256, Section 2.1.2, requires a COT&S every 15 months for this brake equipment. TPW has concluded that a car that runs on a passenger railroad using a 15 month cycle would be legal for 10,800 hours. TPW has calculated that if the equipment is in service only 60 percent of the 15 month cycle, then only 6,480 hours would be used. TPW claims that all of their annual runs, including specials and school runs, only total 1,100 hours a year. Therefore, TPW would like to extend the COT&S time period to 48 months, which would be less than 4,400 hours of actual service time.

Interested parties are invited to participate in these proceedings by submitting written views, data, or comments. FRA does not anticipate scheduling a public hearing in connection with these proceedings since the facts do not appear to warrant a hearing. If any interested party desires an opportunity for oral comment, they should notify FRA in writing, before the end of the comment period and specify the basis for their request.

All communications concerning these proceedings should identify the appropriate docket number (*e.g.,* Waiver Petition Docket Number FRA–2000–7270) and must be submitted in triplicate to the Docket Clerk, DOT Central Docket Management Facility, Room PL–401, Washington, DC. 20590–0001. Communications received within 45 days of the date of this notice will be considered by FRA before final action is taken. Comments received after that date will be considered as far as practicable. All written communications concerning these proceedings are available for examination during regular business hours (9:00 a.m.–5:00 p.m.) at DOT Central Docket Management Facility, Room PL–401 (Plaza Level), 400 Seventh Street S.W., Washington, DC. All documents in the public docket are also available for inspection and copying on the Internet at the docket facility's Web site at http://dms.dot.gov.

Issued in Washington, DC, on October 18, 2000.

Grady C. Cothen, Jr.,

Deputy Associate Administrator for Safety Standards and Program Development.

[FR Doc. 00–27318 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

Notice of Application for Approval of Discontinuance or Modification of a Railroad Signal System or Relief From the Requirements of Title 49 Code of Federal Regulations Part 236

Pursuant to Title 49 Code of Federal Regulations (CFR) part 235 and 49 U.S.C. App. 26, the following railroads have petitioned the Federal Railroad Administration (FRA) seeking approval for the discontinuance or modification of the signal system or relief from the requirements of 49 CFR part 236 as detailed below.

Docket No. FRA–2000–7634.

Applicant: Burlington Northern and Santa Fe Railway, Mr. William G. Peterson, Director Signal Engineering, 4515 Kansas Avenue, Kansas City, Kansas 66106.

Burlington Northern and Santa Fe Railway (BNSF) seeks conditional relief from the requirements of Title 49 CFR, part 236, § 236.102(b) of the Rules, Standards, and Instructions, for the entire BNSF system, to the extent that those searchlight signal mechanisms, that have circuitry designed to automatically detect a sticking mechanism and automatically protect for the safety of train movements, not be required to be inspected and the mechanical movement of the mechanism observed operating to all positions, at least once every six months.

Applicants' justification for relief: Stuck mechanism circuits used in Vital Harmon Logic Controllers (VHLC), Wayside Interface Units (WIU), Microprocessor based coded track and control equipment, and relay based stuck mechanism circuits, continuously monitor searchlight mechanisms.

Any interested party desiring to protest the granting of an application shall set forth specifically the grounds upon which the protest is made and contain a concise statement of the interest of the Protestant in the proceeding. Additionally, one copy of the protest shall be furnished to the applicant at the address listed above.

All communications concerning this proceeding should be identified by the docket number and must be submitted to the Docket Clerk, DOT Central Docket Management Facility, Room PL–401, Washington, DC 20590–0001. Communications received within 45 days of the date of this notice will be considered by FRA before final action is taken. Comments received after that date will be considered as far as practicable. All written communications concerning these proceedings are available for examination during regular business hours (9 am–5 pm) at the above address. All documents in the public docket are also available for inspection and copying on the internet at the docket facility's web sit at *http://dms.dot.gov.*

FRA expects to be able to determine these matters without an oral hearing. However, if a specific request for an oral hearing is accompanied by a showing that the party is unable to adequately present his or her position by written statements, an application may be set for public hearing.

Issued in Washington, D.C. on October 18, 2000.

Grady C. Cothen, Jr.,

Deputy Associate Administrator for Safety Standards and Program Development.

[FR Doc. 00–27317 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA–2000–7966]

Notice of Receipt of Petition for Decision That Nonconforming 1996 Plymouth Voyager Multi-Purpose Passenger Vehicles Are Eligible for Importation

AGENCY: National Highway Traffic Safety Administration, DOT.

ACTION: Notice of receipt of petition for decision that nonconforming 1996 Plymouth Voyager multi-purpose passenger vehicles (MPVs) are eligible for importation.

SUMMARY: This notice announces receipt by the National Highway Traffic Safety Administration (NHTSA) of a petition for a decision that a 1996 Plymouth Voyager manufactured for the European and other foreign markets that was not originally manufactured to comply with all applicable Federal motor vehicle safety standards is eligible for importation into the United States because: (1) It is substantially similar to a vehicle that was originally manufactured for sale in the United States and that was certified by its manufacturer as complying with the safety standards, and (2) it is capable of being readily altered to conform to the standards.

DATES: The closing date for comments on the petition is November 24, 2000.

ADDRESSES: Comments should refer to the docket number and notice number, and be submitted to: Docket Management, Room PL–401, 400 Seventh St., SW, Washington, DC 20590. [Docket hours are from 9 am to 5 pm].

FOR FURTHER INFORMATION CONTACT: George Entwistle, Office of Vehicle Safety Compliance, NHTSA (202–366–5306).

SUPPLEMENTARY INFORMATION:

Background

Under 49 U.S.C. 30141(a)(1)(A), a motor vehicle that was not originally manufactured to conform to all applicable Federal motor vehicle safety standards shall be refused admission into the United States unless NHTSA has decided that the motor vehicle is substantially similar to a motor vehicle originally manufactured for importation into and sale in the United States, certified under 49 U.S.C. 30115, and of the same model year as the model of the motor vehicle to be compared, and is capable of being readily altered to conform to all applicable Federal motor vehicle safety standards.

Petitions for eligibility decisions may be submitted by either manufacturers or importers who have registered with NHTSA pursuant to 49 CFR part 592. As specified in 49 CFR 593.7, NHTSA publishes notice in the **Federal Register** of each petition that it receives, and affords interested persons an opportunity to comment on the petition. At the close of the comment period, NHTSA decides, on the basis of the petition and any comments that it has received, whether the vehicle is eligible for importation. The agency then publishes this decision in the **Federal Register**.

Wallace Environmental Testing Laboratories, Inc., of Houston, Texas (''Wallace'') (Registered Importer 90–005) has petitioned NHTSA to decide whether 1996 Plymouth Voyager MPVs manufactured for the European and other foreign markets are eligible for importation into the United States. The vehicle which Wallace believes is substantially similar is the 1996 Plymouth Voyager that was manufactured for sale in the United States and certified by its manufacturer, Chrysler Corporation, as conforming to all applicable Federal motor vehicle safety standards.

The petitioner claims that it carefully compared the non-U.S. certified 1996 Plymouth Voyager to its U.S. certified counterpart, and found the two vehicles to be substantially similar with respect to compliance with most Federal motor vehicle safety standards.

Wallace submitted information with its petition intended to demonstrate that the non-U.S. certified 1996 Plymouth Voyager, as originally manufactured, conforms to many Federal motor vehicle safety standards in the same manner as its U.S. certified counterpart, or is capable of being readily altered to conform to those standards.

Specifically, the petitioner claims that the non-U.S. certified 1996 Plymouth Voyager is identical to its U.S. certified counterpart with respect to compliance with Standard Nos. 102 *Transmission Shift Lever Sequence. * * *,* 103 *Defrosting and Defogging Systems,* 104 *Windshield Wiping and Washing Systems,* 105 *Hydraulic Brake Systems,* 106 *Brake Hoses,* 113 *Hood Latch Systems,* 114 *Theft Protection,* 116 *Brake Fluid,* 118 *Power-Operated Window Systems,* 119 *New Pneumatic Tires,* 124 *Accelerator Control Systems,* 201 *Occupant Protection in Interior Impact,* 202 *Head Restraints,* 204 *Steering Control Rearward Displacement,* 205 *Glazing Materials,* 206 *Door Locks and Door Retention Components,* 207 *Seating Systems,* 209 *Seat Belt Assemblies,* 210 *Seat Belt Assembly Anchorages,* 212 *Windshield Retention,* 214 *Side Impact Protection,* 216 *Roof Crush Resistance,* 219 *Windshield Zone Intrusion,* and 302 *Flammability of Interior Materials.*

Petitioner also contends that the vehicle is capable of being readily altered to meet the following standards, in the manner indicated:

Standard No. 101 *Controls and Displays:* Replacement of the speedometer/odometer with a unit calibrated in miles per hour.

Standard No. 108 *Lamps, Reflective Devices and Associated Equipment:* Replacement of the headlight and taillight assemblies with components that conform to the standard.

Standard No. 111 *Rearview Mirrors:* Inscription of the required warning statement on the passenger side rearview mirror.

Standard No. 120 *Tire Selection and Rims:* Installation of a tire information placard.

Standard No. 208 *Occupant Crash Protection:* (a) Replacement of the driver's seat belt latch and installation of a seat belt warning buzzer system that conforms to the standard; (b) replacement of the driver's and passenger's side air bag systems and knee bolsters with U.S.-model components on vehicles that are not already so equipped. The petitioner states that the vehicle is equipped with Type 2 seat belts in all front, center and rear designated seating positions, and with a lap belt in the rear center designated seating position.

Standard No. 301 *Fuel System Integrity:* Installation of a rollover valve in the fuel tank vent line between the fuel tank and the evaporative emissions canister.

Additionally, the petitioner states that a vehicle identification number plate must be affixed to the vehicle to meet the requirements of 49 CFR part 565.

Interested persons are invited to submit comments on the petition described above. Comments should refer to the docket number and be submitted to: Docket Management, Room PL–401, 400 Seventh St., SW, Washington, DC 20590. It is requested but not required that 10 copies be submitted.

All comments received before the close of business on the closing date indicated above will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Notice of final action on the petition will be published in the **Federal Register** pursuant to the authority indicated below.

Authority: 49 U.S.C. 30141(a)(1)(A) and (b)(1); 49 CFR 593.8; delegations of authority at 49 CFR 1.50 and 501.8.

Issued on: October 18, 2000.

Marilynne Jacobs,

Director, Office of Vehicle Safety, Compliance.

[FR Doc. 00–27329 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA–2000–7963]

Notice of Receipt of Petition for Decision That Nonconforming 1998 Mercedes-Benz CLK320 Passenger Cars Are Eligible for Importation

AGENCY: National Highway Traffic Safety Administration, DOT.

ACTION: Notice of receipt of petition for decision that nonconforming 1998 Mercedes-Benz CLK320 passenger cars are eligible for importation.

SUMMARY: This document announces receipt by the National Highway Traffic Safety Administration (NHTSA) of a petition for a decision that the 1998 Mercedes-Benz CLK320 that was not originally manufactured to comply with all applicable Federal motor vehicle safety standards is eligible for importation into the United States because: (1) It is substantially similar to a vehicle that was originally manufactured for importation into and sale in the United States and that was certified by its manufacturer as complying with the safety standards, and (2) it is capable of being readily altered to conform to the standards.

DATES: The closing date for comments on the petition is November 24, 2000.

ADDRESSES: Comments should refer to the docket number and notice number, and be submitted to: Docket Management, Room PL–401, 400 Seventh St., SW., Washington, DC 20590. [Docket hours are from 9 am to 5 pm]

FOR FURTHER INFORMATION CONTACT: George Entwistle, Office of Vehicle Safety Compliance, NHTSA (202–366–5306).

SUPPLEMENTARY INFORMATION:

Background

Under 49 U.S.C. 30141(a)(1)(A), a motor vehicle that was not originally manufactured to conform to all applicable Federal motor vehicle safety standards shall be refused admission into the United States unless NHTSA has decided that the motor vehicle is substantially similar to a motor vehicle originally manufactured for importation into and sale in the United States, certified under 49 U.S.C. 30115, and of the same model year as the model of the motor vehicle to be compared, and is capable of being readily altered to conform to all applicable Federal motor vehicle safety standards.

Petitions for eligibility decisions may be submitted by either manufacturers or importers who have registered with NHTSA pursuant to 49 CFR part 592. As specified in 49 CFR 593.7, NHTSA publishes notice in the **Federal Register** of each petition that it receives, and affords interested persons an opportunity to comment on the petition. At the close of the comment period, NHTSA decides, on the basis of the petition and any comments that it has received, whether the vehicle is eligible for importation. The agency then publishes this decision in the **Federal Register**.

Bayway Auto, Inc. of Elizabeth, New Jersey (''BWA'') (Registered Importer 98–166) has petitioned NHTSA to decide whether 1998 Mercedes-Benz CLK320 passenger cars are eligible for importation into the United States. The vehicle which BWA believes is substantially similar is the 1998 Mercedes-Benz CLK320 that was manufactured for importation into, and sale in, the United States and certified by its manufacturer, Daimler Benz, A.G., as conforming to all applicable Federal motor vehicle safety standards.

The petitioner claims that it carefully compared the non-U.S. certified 1998 Mercedes-Benz CLK320 passenger car to its U.S. certified counterpart, and found the two vehicles to be substantially similar with respect to compliance with most Federal motor vehicle safety standards.

BWA submitted information with its petition intended to demonstrate that the non-U.S. certified 1998 Mercedes-Benz CLK320, as originally manufactured, conforms to many Federal motor vehicle safety standards in the same manner as its U.S. certified counterpart, or is capable of being readily altered to conform to those standards.

Specifically, the petitioner claims that the non-U.S. certified 1998 Mercedes-Benz CLK320 is identical to its U.S. certified counterpart with respect to compliance with Standard Nos. 102 *Transmission Shift Lever Sequence * * **, 103 *Defrosting and Defogging Systems*, 104 *Windshield Wiping and Washing Systems*, 105 *Hydraulic Brake Systems*, 106 *Brake Hoses*, 109 *New Pneumatic Tires*, 113 *Hood Latch Systems*, 116 *Brake Fluid*, 124 *Accelerator Control Systems*, 201 *Occupant Protection in Interior Impact*, 202 *Head Restraints*, 204 *Steering Control Rearward Displacement*, 205 *Glazing Materials*, 207 *Seating Systems*, 209 *Seat Belt Assemblies*, 210 *Seat Belt Assembly Anchorages*, 212 *Windshield Retention*, 214 *Side Impact Protection*, 216 *Roof Crush Resistance*, 219 *Windshield Zone Intrusion*, and 302 *Flammability of Interior Materials*.

Petitioner also contends that the vehicle is capable of being readily altered to meet the following standards, in the manner indicated:

Standard No. 101 *Controls and Displays:* (a) Substitution of a lens marked ''Brake'' for a lens with a noncomplying symbol on the brake failure indicator lamp; (b) installation of a seat belt warning lamp that displays the appropriate symbol; (c) recalibration of the speedometer/odometer from kilometers to miles per hour.

Standard No. 108 *Lamps, Reflective Devices and Associated Equipment:* (a) Installation of U.S.-model headlamp assemblies which incorporate headlamps with DOT markings; (b) installation of U.S.-model front sidemarker/reflector assemblies; (c) installation of U.S.-model taillamp assemblies.

Standard No. 110 *Tire Selection and Rims:* Installation of a tire information placard.

Standard No. 111 *Rearview Mirror:* Replacement of the passenger side rearview mirror with a U.S.-model component.

Standard No. 114 *Theft Protection:* Installation of a warning buzzer microswitch in the steering lock assembly and a warning buzzer.

Standard No. 118 *Power Window Systems:* Rewiring of the power window system so that the window transport is inoperative when the ignition is switched off.

Standard No. 206 *Door Locks and Door Retention Components:* Replacement of rear door locks and rear door lock buttons with U.S.-model components.

Standard No. 208 *Occupant Crash Protection:* (a) Installation of a U.S.-model seat belt in the driver's seating position or a belt webbing actuated microswitch inside the driver's seat belt retractor; (b) installation of an ignition switch actuated seat belt warning lamp and buzzer; (c) replacement of the driver's and passenger's side air bags and knee bolsters with U.S.-model components if the vehicle is not already so equipped. The petitioner states that the vehicles are equipped with combination lap and shoulder restraints which adjust by means of an automatic retractor and release by means of a single push button in both front designated seating positions, with combination lap and shoulder restraints which release by means of a single push button in both rear outboard designated seating positions, and with a lap belt in the rear center designated seating position.

Standard No. 301 *Fuel System Integrity:* Installation of a rollover valve in the fuel tank vent line.

The petitioner also states that a vehicle identification number plate must be affixed to the vehicle to meet the requirements of 49 CFR part 565.

Interested persons are invited to submit comments on the petition described above. Comments should refer to the docket number and be submitted to: Docket Section, National Highway Traffic Safety Administration, Room 5109, 400 Seventh Street, SW., Washington, DC 20590. It is requested but not required that 10 copies be submitted.

All comments received before the close of business on the closing date indicated above will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Notice of final action on the petition will be published in the **Federal Register** pursuant to the authority indicated below.

Authority: 49 U.S.C. 30141(a)(1)(A) and (b)(1); 49 CFR 593.8; delegations of authority at 49 CFR 1.50 and 501.8.

Issued on: October 18, 2000.

Marilynne Jacobs,

Director, Office of Vehicle Safety Compliance.

[FR Doc. 00–27330 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA–2000–7964]

Notice of Receipt of Petition for Decision That Nonconforming 2000 BMW 3 Series Passenger Cars Are Eligible for Importation

AGENCY: National Highway Traffic Safety Administration, DOT.

ACTION: Notice of receipt of petition for decision that nonconforming 2000 BMW 3 Series passenger cars are eligible for importation.

SUMMARY: This document announces receipt by the National Highway Traffic Safety Administration (NHTSA) of a petition for a decision that 2000 BMW 3 Series passenger cars that were not originally manufactured to comply with all applicable Federal motor vehicle safety standards are eligible for importation into the United States because (1) they are substantially similar to vehicles that were originally manufactured for importation into and sale in the United States and that were certified by their manufacturer as complying with the safety standards, and (2) they are capable of being readily altered to conform to the standards.

DATES: The closing date for comments on the petition is November 24, 2000.

ADDRESSES: Comments should refer to the docket number and notice number, and be submitted to: Docket Management, Room PL–401, 400 Seventh St., SW., Washington, DC 20590. [Docket hours are from 9 am to 5 pm]

FOR FURTHER INFORMATION CONTACT: George Entwistle, Office of Vehicle Safety Compliance, NHTSA (202–366–5306).

SUPPLEMENTARY INFORMATION:

Background

Under 49 U.S.C. 30141(a)(1)(A), a motor vehicle that was not originally manufactured to conform to all applicable Federal motor vehicle safety standards shall be refused admission into the United States unless NHTSA has decided that the motor vehicle is substantially similar to a motor vehicle originally manufactured for importation into and sale in the United States, certified under 49 U.S.C. 30115, and of the same model year as the model of the motor vehicle to be compared, and is capable of being readily altered to conform to all applicable Federal motor vehicle safety standards.

Petitions for eligibility decisions may be submitted by either manufacturers or importers who have registered with NHTSA pursuant to 49 CFR part 592. As specified in 49 CFR 593.7, NHTSA publishes notice in the **Federal Register** of each petition that it receives, and affords interested persons an opportunity to comment on the petition. At the close of the comment period, NHTSA decides, on the basis of the petition and any comments that it has received, whether the vehicle is eligible for importation. The agency then publishes this decision in the **Federal Register**.

Bayway Auto, Inc. of Elizabeth, New Jersey (''BWA'') (Registered Importer 98–166) has petitioned NHTSA to decide whether 2000 BMW 3 Series passenger cars are eligible for importation into the United States. The vehicles which BWA believes are substantially similar are 2000 BMW 3 Series passenger cars that were manufactured for importation into, and sale in, the United States and certified by their manufacturer, Bayerische Motoren Werke, A.G., as conforming to all applicable Federal motor vehicle safety standards.

The petitioner claims that it carefully compared non-U.S. certified 2000 BMW 3 Series passenger cars to their U.S.-certified counterparts, and found the vehicles to be substantially similar with respect to compliance with most Federal motor vehicle safety standards.

BWA submitted information with its petition intended to demonstrate that non-U.S. certified 2000 BMW 3 Series passenger cars, as originally manufactured, conform to many Federal motor vehicle safety standards in the same manner as their U.S.-certified counterparts, or are capable of being readily altered to conform to those standards.

Specifically, the petitioner claims that non-U.S. certified 2000 BMW 3 Series passenger cars are identical to their U.S.-certified counterparts with respect to compliance with Standard Nos. 102 *Transmission Shift Lever Sequence * * *,* 103 *Defrosting and Defogging Systems*, 104 *Windshield Wiping and Washing Systems*, 105 *Hydraulic Brake*

Systems, 106 *Brake Hoses*, 109 *New Pneumatic Tires*, 113 *Hood Latch Systems*, 116 *Brake Fluid*, 124 *Accelerator Control Systems*, 202 *Head Restraints*, 204 *Steering Control Rearward Displacement*, 205 *Glazing Materials*, 207 *Seating Systems*, 209 *Seat Belt Assemblies*, 210 *Seat Belt Assembly Anchorages*, 212 *Windshield Retention*, 214 *Side Impact Protection*, 216 *Roof Crush Resistance*, 219 *Windshield Zone Intrusion*, and 302 *Flammability of Interior Materials*.

Additionally, the petitioner states that non-U.S. certified 2000 BMW 3 Series passenger cars comply with the Bumper Standard found in 49 CFR part 581.

Petitioner also contends that the vehicles are capable of being readily altered to meet the following standards, in the manner indicated:

Standard No. 101 *Controls and Displays:* (a) Substitution of a lens marked ''Brake'' for a lens with a noncomplying symbol on the brake failure indicator lamp; (b) installation of a seat belt warning lamp that displays the appropriate symbol; (c) recalibration of the speedometer/odometer from kilometers to miles per hour.

Standard No. 108 *Lamps, Reflective Devices and Associated Equipment:* (a) Installation of U.S.-model headlamp assemblies which incorporate headlamps with DOT markings; (b) installation of U.S.-model front and rear sidemarker/reflector assemblies; (c) installation of U.S.-model tail-lamp assemblies.

Standard No. 110 *Tire Selection and Rims:* Installation of a tire information placard.

Standard No. 111 *Rearview Mirror:* Replacement of the passenger side rearview mirror with a U.S.-model component.

Standard No. 114 *Theft Protection:* Installation of a warning buzzer microswitch in the steering lock assembly and a warning buzzer.

Standard No. 118 *Power Window Systems:* Rewiring of the power window system so that the window transport mechanism is inoperative when the ignition is switched off.

Standard No. 201 *Occupant Protection in Interior Impact:* Inspection of all components subject to the upper interior head impact requirements and replacements of those that are not identical to components found on U.S.-certified models.

Standard No. 206 *Door Locks and Door Retention Components:* Replacement of the rear door locks and rear door lock buttons with U.S.-model components.

Standard No. 208 *Occupant Crash Protection:* (a) Installation of a U.S.-model seat belt in the driver's seating position or a belt webbing actuated microswitch inside the driver's seat belt retractor; (b) installation of an ignition switch actuated seat belt warning lamp and buzzer; (c) replacement of the driver's and passenger's side air bags and knee bolsters with U.S.-model components if the vehicle is not already so equipped. The petitioner states that the vehicles are equipped with combination lap and shoulder restraints which adjust by means of an automatic retractor and release by means of a single push button in both front designated seating positions, with combination lap and shoulder restraints which release by means of a single push button in both rear outboard designated seating positions, and with a lap belt in the rear center designated seating position.

Standard No. 301 *Fuel System Integrity:* Installation of a rollover valve in the fuel tank vent line.

The petitioner also states that a vehicle identification number plate must be affixed to the vehicle to meet the requirements of 49 CFR part 565.

Additionally, the petitioner states that non-U.S. certified 2000 BMW 3 Series passenger cars will be inspected prior to importation to ensure that they are equipped to comply with the Theft Prevention Standard found in 49 CFR part 541 and that a U.S.-model anti-theft device will be installed on vehicles that are not already so equipped.

Interested persons are invited to submit comments on the petition described above. Comments should refer to the docket number and be submitted to: Docket Management, Room PL–401, 400 Seventh St., SW., Washington, DC 20590. It is requested but not required that 10 copies be submitted.

All comments received before the close of business on the closing date indicated above will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Notice of final action on the petition will be published in the **Federal Register** pursuant to the authority indicated below.

Authority: 49 U.S.C. 30141(a)(1)(A) and (b)(1); 49 CFR 593.8; delegations of authority at 49 CFR 1.50 and 501.8.

Issued on: October 18, 2000.

Marilynne Jacobs,

Director, Office of Vehicle Safety Compliance.

[FR Doc. 00–27331 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA 2000–8090; Notice 1]

Honda Motor Company, Ltd.; Receipt of Application for Temporary Exemption From Federal Motor Vehicle Safety Standard No. 122

American Honda Motor Co., Inc., of Torrance, California (''Honda''), on behalf of Honda Motor Company, Ltd., of Japan, has applied for a temporary exemption from the fade and water recovery requirements of Federal Motor Vehicle Safety Standard No. 122 *Motorcycle Brake Systems*. The basis of the application is that an exemption would make easier the development or field evaluation of a new motor vehicle safety feature providing a safety level at least equal to the safety level of the standard.

This notice of receipt of an application is published in accordance with the requirements of 49 U.S.C. 30113(b)(2) and does not represent any judgment of the agency on the merits of the application.

Honda seeks an exemption of one year for its 2001 CBR1100XX motorcycle ''from the requirement of the minimum hand-lever force of five pounds in the base line check for the fade and water recovery tests.'' Honda has previously received exemptions totaling three years from this requirement for the 1998–2000 model year CBR1100XX (See Docket No. 93–47). The brake system of the 2001 model is said to be identical to the system on vehicles previously exempted. In 1997, Honda filed a petition for rulemaking to amend Standard No. 122 to accommodate the braking system of the CBR1100XX. NHTSA granted the petition and published a Notice of Proposed Rulemaking on November 17, 1999 (64 FR 62622); however, a final rule had not been issued as of September 1, 2000, when its exemption expired.

Honda has been evaluating the marketability of a motorcycle brake system setting which is currently applied to the model sold in Europe, and has sold 3,600 exempted motorcycles as of the date of its application. The difference in setting is limited to a softer master cylinder return spring in the European version. As Honda said in its initial application in 1997, using the softer spring results in a ''more predictable (linear) feeling during initial brake lever application.'' Although ''the change allows a more predictable rise in brake gain, the on-set of braking occurs at lever forces slightly below the five pound minimum'' specified in Standard No. 122. If on-set of braking is delayed until the five pound minimum is reached, a feeling results that the brakes come on suddenly or unpredictably. Honda considers that motorcycle brake systems have continued to evolve and improve since Standard No. 122 was adopted in 1972, and that one area of improvement is brake lever force which has gradually been reduced. However, the five-pound minimum specification ''is preventing further development and improvement'' of brake system characteristics. Honda reports that many who try the system ''feel that they have more control with independent front and rear brake systems,'' and that ''The European version setting has shown greater consumer acceptance.''

The CBR1100XX is equipped with Honda's Linked Brake System (LBS) which is designed to engage both front and rear brakes when either the front brake lever or the rear brake pedal is used. The LBS differs from other integrated systems in that it allows the rider to choose which wheel gets the majority of braking force, depending on which brake control the rider uses.

According to Honda, the overall braking performance remains unchanged from a conforming motorcycle and from Honda cycles previously exempted. If the CBR1100XX is exempted it will meet ''the stopping distance requirement but at lever forces slightly below the minimum.''

While Honda's application did not cite applicable sections of Standard No. 122, its previous applications asked for relief from the first sentence of S6.10 *Brake application forces*, which reads:

Except for the requirements of the fifth recovery stop in S5.4.3 and S5.7.2 (S7.6.3 and S7.10.2) the hand lever force is not less than five and not more than 55 pounds and the foot pedal force is not less than 10 and not more than 90 pounds.

However, NHTSA determined that Honda required relief from different provisions of Standard No. 122, although S6.10 related to them. Paragraph S6 only sets forth the test conditions under which a motorcycle must meet the performance requirements of S5. A motorcycle manufacturer certifies compliance with the performance requirements of S5 on the basis of tests conducted according to the conditions of S6 and in the manner specified by S7. In short, NHTSA provided relief from the performance requirements of S5 that are based upon the lever actuation force test conditions of S6.10 as used in the test procedures of S7.

These relate to the baseline checks under which performance is judged for the service brake system fade and fade recovery tests (S5.4), and for the water recovery tests (S5.7). According to the test procedures of S7, the baseline check stops for fade (S7.6.1) and water recovery (S7.10.1) are to be made at 10 to 11 feet per second per second (fpsps) per stop. The fade recovery test (S7.6.3) also specifies stops at 10 to 11 fpsps. Test data submitted by Honda with its 1997 application, and which it has incorporated by reference in its 2000 application, show that, using a hand lever force of 2.3 kg (5.1 pounds), the deceleration for these stops is 3.05 to 3.35 meters per second per second, or 10.0 to 11.0 fpsps. This does not mean that Honda cannot comply under the strict parameters of the standard, but the system is designed for responsive performance when a hand lever force of less than five pounds is used. For these reasons, NHTSA interprets Honda's application as requesting relief from S5.4.2, S5.4.3, and S5.7.2.

Honda argues that granting an exemption would be in the public interest and consistent with objectives of traffic safety because it

* * * should improve a rider's ability to precisely modulate the brake force at low-level brake lever input forces.

Improving the predictability, even at very low-level brake lever input, increases the rider's confidence in the motorcycle's brake system. We feel that improvements in braking, even those of an incremental nature, are in the public's interest and consistent with the objectives of the National Traffic and Motor Vehicle Safety Act.

Interested persons are invited to submit comments on the application described above. Comments should refer to the docket number and the notice number, and be submitted to: Docket Management, Room PL–401, s40 Seventh Street, SW., Washington, DC 20590. It is requested but not required that 10 copies be submitted.

All comments received before the close of business on the comment closing date indicated below will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Notice of final action on the application will be published in the **Federal Register** pursuant to the authority indicated below. Comment closing date: November 24, 2000.

Authority: 49 U.S.C. 30113; delegations of authority at 49 CFR 1.50. and 501.8.

Issued on October 12, 2000.

Stephen R. Kratzke,

Associate Administrator for Safety Performance Standards.

[FR Doc. 00–26817 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA–2000–8133]

Panoz Auto Development Company; Application for Temporary Exemption From Federal Motor Vehicle Safety Standard No. 208

Panoz Auto Development Company of Hoschton, Georgia, has applied for a temporary exemption from paragraph S4.1.4 of Federal Motor Vehicle Safety Standard No. 208 *Occupant Crash Protection.* The basis of the application is that compliance will cause substantial economic hardship to a manufacturer that has tried to comply with the standard in good faith.

This notice of receipt of an application for renewal is published in accordance with the requirements of 49 U.S.C. 30113(b)(2) and does not represent any judgment of the agency on the merits of the application.

Panoz received NHTSA Exemption No. 93–5 from S4.1.4 of Standard No. 208, an exemption for two years which was initially scheduled to expire August 1, 1995 (58 FR 43007). It applied for, and received, two two-year renewals of this exemption (61 FR 2866; 63 FR 16856), the last of which expired March 1, 2000. Panoz now seeks a new exemption from S4.1.4 on hardship grounds, that would expire March 31, 2003. This exemption would apply to the Roadster but not to the company's other product, Esperante, which has been designed during the term of the last exemption to comply with S4.1.4.

Panoz's original exemption was granted pursuant to the representation that its Roadster would be equipped with a Ford-supplied driver and passenger airbag system, and would comply with Standard No. 208 by April 5, 1995, after estimated expenditures of $472,000. As of the time of its application, April 1993, the company had expended 750 man hours and $15,000 on the project.

According to its 1995 application for renewal,

Panoz has continued the process of researching and developing the installation of a driver and passenger side airbag system on the Roadster since the original exemption petition was submitted to NHTSA on

April 5, 1993. To date, an estimated 1680 man-hours and approximately $50,400 have been spent on this project.

At that time, Panoz used a 5.0L Ford Mustang GT engine and five speed manual transmission in its car. Because ''the 1995 model year and associated emission components were revised by Ford,'' this caused

a delay in the implementation of the airbag system on the Roadster due to further research and development time requirements and expenditure of additional monies to evaluate the effects of these changes on the airbag adaptation program.

Shortly before filing its application for first renewal in 1995, Panoz learned that Ford was replacing the 5.0L engine and emission control system on the 1996 Mustang and other passenger cars with a modular 4.6L engine and associated emission components. The 1995 system did not meet 1996 On-Board Diagnostic emission control requirements, and Panoz was faced with using the 1996 engine and emission control system as a substitute. The majority of the money and man hours at that time had been spent on adapting an airbag system to the 5.0L engine car, and the applicant had to concentrate on adapting it to a 4.6L engine car. Panoz listed eight types of modifications and testing necessary for compliance that would cost it $337,000 if compliance were required at the end of a one-year period. It asked for and received a two-year renewal of its exemption.

However, between 1995 and 1997, Panoz found integration of the 4.6L engine into its existing chassis more difficult than anticipated, primarily because the 4.6L was 10 inches wider than the engine it replaced. This required a total redesign of the chassis, requiring expenditure of ''a significant amount of resources.'' Simultaneously, Panoz designed the vehicle to allow for the integration of the Ford Mustang driver-side and passenger-side airbag systems. Panoz described these steps in some detail and estimates that between May 1995 and August 1997 it spent 2200 man-hours and $66,000 on these efforts. In the same time period, it spent $47,000 in static and dynamic crash testing of a 4.6L car related to airbag system development. Panoz concluded by describing the additional modifications and testing required to adapt the Ford system to its car. These costs totaled $358,000. In 1997, the company argued that a two-year renewal of its exemption would provide time to generate sufficient income (approximately $15,000 a month through sales of vehicles and private funding) to fund the modifications and testing. After August 1997, Panoz spent an additional 1779 man hours and $87,375 in airbag development for the Roadster, a large portion of which was to adapt the 1997–98 Ford Mustang mechanical system. In September 1998, NHTSA issued its NPRM on advanced airbags which would have required Panoz to begin the phase-in of the new system as of September 1, 2002. Panoz decided that the mechanical airbag system it was developing could not comply with the proposed advanced system. It also lacked the resources to develop two systems simultaneously, so it turned its development efforts towards the advanced system, which will be in its new model, Esperante. In November 1999, NHTSA issued a Supplemental NPRM under which implementation of the advanced airbag rule would be delayed for small manufacturers until September 1, 2005 (subsequently adopted in the final rule of May 2000). This resulted in Panoz's resumption of efforts to adapt the Ford Mustang airbag system to its Roadster. However, with its 1999 models, Ford had replaced the mechanical airbag system with an electronic one, ''which dictated that Panoz would have to conduct further crash testing in order to properly calibrate the [Restraint Control Module] for application on the AIV Roadster.'' Panoz intends to have the electronic system adapted by the end of the exemption it has requested. The foregoing is a summary of Panoz's compliance efforts which are set forth in detail in its application.

In sum, Panoz has been exempted from compliance with the airbag requirements for all passenger cars that it manufactured between August 1, 1993, and March 1, 2000, approximately 6½ years. These total 178 units.

At the time of its original petition, Panoz's cumulative net losses since incorporation in 1989 were $1,265,176. It lost an additional $249,478 in 1993, $169,713 in 1994, $721,282 in 1995, and $1,349,241 in 1996. Its losses continued in 1997, 1998, and 1999, respectively $3,253,111, $4,264,689, and $2,996,903. Thus, Panoz's losses for the years that the exemption was in effect, 1993–99, total $13,004,417.

The applicant reiterated its original arguments that an exemption would be in the public interest and consistent with the objectives of traffic safety. Specifically, The Roadster is built in the United States and uses 100 percent U.S. components, bought from Ford and approximately 95 other companies (''at least 250 employees'' of which ''remain involved in the Panoz project''). Panoz provides employment for 47 full time and three part time employees. The company now has 33 U.S. dealers. The Roadster is said to provide the public with a classic alternative to current production vehicles. It is the only vehicle that incorporates ''molded aluminum body panels for the entire car,'' a process which continues to be evaluated by other manufacturers and which ''results in the reduction of overall vehicle weight, improved fuel efficiency, shortened tooling lead times, and increased body strength.'' With the exception of S4.1.4 of Standard No. 208, the Roadster meets all other Federal motor vehicle safety standards.

Interested persons are invited to submit comments on the application described above. Comments should refer to the docket number and the notice number, and be submitted to: Docket Management, Department of Transportation, room PL–401, 400 Seventh Street SW, Washington, DC 20590. It is requested but not required that 10 copies be submitted.

All comments received before the close of business on the comment closing date indicated below will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Notice of final action on the application will be published in the **Federal Register** pursuant to the authority indicated below. Comment closing date: November 24, 2000.

Authority: (49 U.S.C. 30113; delegations of authority at 49 CFR 1.50. and 501.8).

Issued on October 19, 2000.

Stephen R. Kratzke,

Associate Administrator for Safety Performance Standards.

[FR Doc. 00–27316 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

Office of Hazardous Materials Safety; Notice of Applications for Modification of Exemption

AGENCY: Research and Special Programs Administration, DOT.

ACTION: List of applications for modification of exemptions.

SUMMARY: In accordance with the procedures governing the application for, and the processing of, exemptions from the Department of Transportation's Hazardous Materials Regulations (49 CFR part 107, subpart B), notice is hereby given that the Office of

Hazardous Materials Safety has received the applications described herein. This notice is abbreviated to expedite docketing and public notice. Because the sections affected, modes of transportation, and the nature of application have been shown in earlier **Federal Register** publications, they are not repeated here. Requests for modifications of exemptions (*e.g.* to provide for additional hazardous materials, packaging design changes, additional mode of transportation, etc.) are described in footnotes to the application number. Application numbers with the suffix ''M'' denote a modification request. These applications have been separated from the new applications for exemptions to facilitate processing.

DATES: Comments must be received on or before November 9, 2000.

ADDRESSES: Records Center, Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590.

Comments should refer to the application number and be submitted in triplicate. If confirmation of receipt of comments is desired, include a self-addressed stamped postcard showing the exemption number.

FOR FURTHER INFORMATION CONTACT: Copies of the applications are available for inspection in the Records Center, Nassif Building, 400 7th Street SW, Washington, DC or at http://dms.dot.gov.

This notice of receipt of applications for modification of exemptions is published in accordance with part 107 of the Federal hazardous materials transportation law (49 U.S.C. 5117(b); 49 CFR 1.53(b)).

Issued in Washington, DC, on October 19, 2000.

J. Suzanne Hedgepeth,

Director, Office of Hazardous Materials Exemptions and Approvals.

Application No.	Docket No.	Application	Modification of exemption
8698–M		Taylor-Wharton Gas Equipment (Div of Harsco Corp,) Theodore, AL (See Footnote 1)	8698
11044–M		ChemiTech, Ltd., Des Moines, IA (See Footnote 2)	11044
11202–M		Newport News Shipbuilding & Dry Dock Co., Newport News, VA (See Footnote 3)	11202
11379–M		TRW Automotive Occupant Restraint Systems, Washington, MI (See Footnote 4)	11379
11864–M	RSPA–1997–2453	International Paper, Moss Point, MS (See Footnote 5)	11864
12334–M	RSPA–1999–6177	Autoclave Engineers, Erie, PA (See Footnote 6)	12334
12442–M	RSPA–2000–7208	Cryogenic Vessel Alternatives, La Porte, TX (See Footnote 7)	12442

[1] To modify the exemption concerning the pressure relief value, specified retest pressure and OWTT recordkeeping requirements of non-DOT specification portable tanks transporting certain Division 2.2 materials.

[2] To modify the exemption to authorize the use of additional cylinders without exceeding cylinder service pressure for the transportation of a re-formulated organophosphate product.

[3] To modify the exemption to allow for the transportation of Division 6.1 and additional Class 8, Class 9 and Division 5.1 materials to cross a public road, from one part of a plant to another.

[4] To modify the exemption to authorize a design change of the pressure vessel to increase the maximum fill pressure to 7,500 psi charged with non-toxic, non-liquefied gases, or mixtures thereof.

[5] To modify the exemption to authorize party status and to include the offering of tank cars containing a residue of sulfuric acid without removing the frangible disc in the pressure relief device during inspection.

[6] To modify the exemption to authorize the transportation of Division 2.2, Class 3, Division 6.1 and additional Division 2.1 materials in non-DOT specification cylinders.

[7] To modify the exemption to waive the impact test requirements for stainless steel portable tanks for materials used in a lading warmer than −425 degrees.

[FR Doc. 00–27379 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–60–M

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

Office of Hazardous Materials Safety; Notice of Applications for Exemptions

AGENCY: Research and Special Programs Administration, DOT.

ACTION: List of applicants for exemptions.

SUMMARY: In accordance with the procedures governing the application for, and the processing of, exemptions from the Department of Transportation's Hazardous Materials Regulations (49 CFR part 107, subpart B), notice is hereby given that the Office of Hazardous Materials Safety has received the applications described herein. Each mode of transportation for which a particular exemption is requested is indicated by a number in the ''Nature of Application'' portion of the table below as follows: 1—Motor vehicle, 2—Rail freight, 3—Cargo vessel, 4—Cargo aircraft only, 5—Passenger-carrying aircraft.

DATES: Comments must be received on or before November 24, 2000.

ADDRESSES: Records Center, Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590.

Comments should refer to the application number and be submitted in triplicate. If confirmation of receipt of comments is desired, include a self-addressed stamped postcard showing the exemption application number.

FOR FURTHER INFORMATION CONTACT: Copies of the applications (See Docket Number) are available for inspection at the New Docket Management Facility, PL–401, at the U.S. Department of Transportation, Nassif Building, 400 7th Street, SW., Washington, DC 20590 or at http://dms.dot.gov.

This notice of receipt of applications for new exemptions is published in accordance with Part 107 of the Federal hazardous materials transportation law (49 U.S.C. 5117(b); 49 CFR 1.53(b)).

Issued in Washington, DC, on October 19, 2000.

J. Suzanne Hedgepeth,

Director, Office of Hazardous Materials Exemptions and Approvals.

NEW EXEMPTIONS

Application No.	Docket No.	Applicant	Regulation(s) affected	Nature of exemption thereof
12547–N	RSPA–00–8006	Rohm and Haas Company, Philadelphia, PA.	49 CFR 177.834(i)(3)	To authorize the loading and/or unloading of hazardous materials to/from cargo tank motor vehicles without the physical presence of an unloader. (mode 1)
12548–N	RSPA–00–8005	TriCal Inc., Hollister, CA	49 CFR 174.67(i) & (j), 174.67(j)	To authorize rail car connectors to remain attached while standing without the physical presence of an unloader. (mode 2)
12549–N	RSPA–00–8004	Griro S.A., Romania	49 CFR 178.245–1(a)	To authorize the manufacture, marking, sale and use of DOT Specification 51 steel portable tanks permanently installed in an ISO frame that have been designated, constructed and stamped in accordance with Section VIII, Division 2 instead of Division 1 of the ASME Code. (modes 1, 2, 3)
12552–N	RSPA–00–8001	Illbruck Sealant Systems, B.V., The Netherlands.	49 CFR 173.306(a)(3)(v)	To authorize an alternative testing method for specially designed aerosol containers for use in transporting limited quantities of Division 2.1 material. (modes 1, 2, 3)
12554–N	RSPA–00–8116	LKQ Corporation, Lecanto, FL.	49 CFR 173.166(d)(3)	To authorize the transportation in commerce of recycled airbags in bulk shipment without intermediate form of containment. (mode 1)

[FR Doc. 00–27380 Filed 10–24–00; 8:45 am]

BILLING CODE 4910–60–M

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the Currency

[Docket No. 00–21]

Notice of Request for Preemption Determination

AGENCY: Office of the Comptroller of the Currency, Treasury.

ACTION: Notice and request for comment.

SUMMARY: The Office of the Comptroller of the Currency (OCC) is publishing for comment a request for the OCC's opinion about whether Federal law would preempt certain provisions of Ohio law that limit the manner in which reclaimed leased vehicles may be sold. The purpose of this notice and request for comment is to provide interested persons with an opportunity to submit comments prior to the OCC's issuance of an opinion.

DATES: Comments must be received on or before November 24, 2000.

ADDRESSES: Comments should be sent to the Communications Division, Office of the Comptroller of the Currency, 250 E Street, SW., Third Floor, Attention: Docket No. 00–21, Washington, DC 20219. You may submit comments electronically to regs.comments@occ.treas.gov or by facsimile transmission to (202) 874–5274. You can inspect and photocopy the comments at the OCC's Public Reference Room, 250 E Street, SW., Washington, DC, between 9 a.m. and 5 p.m. on business days. You can make an appointment to inspect the comments by calling (202) 874–5043.

FOR FURTHER INFORMATION CONTACT: Michele Meyer, Senior Attorney, or Mark Tenhundfeld, Assistant Director, Legislative and Regulatory Activities Division, (202) 874–5090.

SUPPLEMENTARY INFORMATION: The requester is a national bank that engages in motor vehicle leasing in Ohio. On November 12 , 1993, the Registrar of the Ohio Bureau of Motor Vehicles (OBMV) issued a memorandum in which it concluded that Ohio Revised Code section 4517 [1] prohibits the public sale of reclaimed leased vehicles.[2] Under this interpretation, reclaimed leased vehicles can only be sold at wholesale to persons licensed under section 4517 as ''dealers.''

The requester has asked our opinion whether the National Bank Act would preempt section 4517 as interpreted by the OBMV. Under the National Bank Act, 12 U.S.C. 24(Seventh) and 12 U.S.C. 24(Tenth), a national bank is authorized to conduct a leasing business consistent with the provisions of 12 CFR part 23. The requester contends that its leasing authority includes the authority to dispose of reclaimed or off-lease vehicles in the manner that is economically most beneficial to the bank and that the bank is typically able to get the best price for its reclaimed or off-lease vehicles by selling directly to the public. The requester therefore asserts that the OBMV's construction of the Ohio law to prohibit public sales of reclaimed leased vehicles impairs a national bank's ability to exercise it leasing authority.

Section 114 of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 (Pub. L. 103–328, 108 Stat. 2338) generally requires the OCC to publish in the **Federal Register** a descriptive notice of certain requests that the OCC receives for preemption opinions.[3] Under section 114, the OCC must publish notice before it issues any opinion letter or interpretive rule opining that Federal law preempts the application to a national bank of any State law in four designated areas: community reinvestment, consumer protection, fair lending, or the establishment of intrastate branches. Pursuant to section 114, interested persons have at least 30 days to submit written comments. Without making a determination as to whether section 114 applies to this request, the OCC has decided that it is appropriate to use notice and comment procedures.

The OCC invites comments on the issues described above. We will publish in the **Federal Register** any final opinion letter we issue in response to the request.

Dated: October 16, 2000.

John D. Hawke, Jr.,

Comptroller of the Currency.

[FR Doc. 00–27347 Filed 10–24–00; 8:45 am]

BILLING CODE 4810–33–P

[1] Ohio Rev. Code Ann. § 4517.

[2] Memorandum from Mitchell J. Brown, Registrar, Ohio Bureau of Motor Vehicles, to All Ohio Auto Auctions, Leasing Dealers, and Banks (November 12, 1993).

[3] 12 U.S.C. 43.

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the Currency

[Docket No. 00–22]

Notice of Request for Preemption Determination

AGENCY: Office of the Comptroller of the Currency, Treasury.

ACTION: Notice and request for comment.

SUMMARY: The Office of the Comptroller of the Currency (OCC) is publishing for comment two written requests for the OCC's opinion about whether Federal law would preempt certain provisions of the Michigan Motor Vehicles Sales Finance Act (MVSFA) as interpreted by the Michigan Financial Institutions Bureau (FIB), that limit the ability of banks to make loans to finance motor vehicle sales. The purpose of this notice and request for comment is to provide interested persons with an opportunity to submit comments on this matter prior to the OCC's issuance of an opinion.

DATES: Comments must be received on or before November 24, 2000.

ADDRESSES: Comments should be sent to the Communications Division, Office of the Comptroller of the Currency, 250 E Street, SW., Third Floor, Attention: Docket No. 00–22, Washington, DC 20219. You may submit comments electronically to regs.comments@occ.treas.gov or by facsimile transmission to (202) 874–5274. You can inspect and photocopy the comments at the OCC's Public Reference Room, 250 E Street, SW., Washington, DC, between 9 a.m. and 5 p.m. on business days. You can make an appointment to inspect the comments by calling (202) 874–5043.

FOR FURTHER INFORMATION CONTACT: Michele Meyer, Senior Attorney, or Mark Tenhundfeld, Assistant Director, Legislative and Regulatory Activities Division, (202) 874–5090.

SUPPLEMENTARY INFORMATION:

Background

The requesters are national banks headquartered in Ohio that would like to conduct motor vehicles sales financing through automobile dealers in Michigan. The banks would enter into agreements with the dealers under which the dealers would act as the banks' agents for the purpose of soliciting loans to finance motor vehicles, taking applications for the vehicle loans, preparing the loan documentation, and obtaining the buyers' signatures on all required documents. The banks would prescribe the terms of the loan, including the minimum interest rate, and fund the loans.

This method of conducting business is inconsistent with a Declaratory Ruling issued by the FIB on January, 1, 2000, concerning this proposed practice.[1] The FIB concluded that, under the MVSFA, the proposed arrangement between the banks and Michigan motor vehicle dealers would result in ''installment sale contracts'' subject to the MVSFA.[2] In order for a motor vehicle installment sale contract to comply with the MVSFA: (1) The dealer must originate the loan as a licensed installment seller of motor vehicles; and (2) the bank may only purchase the loan, as a licensed sales finance company.[3] The transaction must also comply with the several other requirements of the MVSFA that apply to installment sale contracts.[4] Thus, a national bank cannot originate motor vehicle loans through a dealer agent.

The requesters have asked our opinion whether the National Bank Act preempts the provisions of the MVSFA described in this notice, as those provisions have been interpreted by the FIB, with respect to national banks. The requesters assert that the FIB's construction of the proposed financing transactions as installment sale contracts under the MVSFA impairs a national bank's authority under the National Bank Act to make loans and determine the interest rates on those loans.[5] The requesters contend that the FIB's construction of the proposed financing transactions as installment sale contracts subject to the MVSFA is an impermissible state restriction of a national bank's exercise of its authority under 12 U.S.C. 24(Seventh) to originate loans directly to the bank's customers through third-party agents without having to obtain state licenses. The requesters further assert that the FIB's interpretation, which required the dealer, rather than the bank, to originate the loans unlawfully restricts a national bank's authority under 12 U.S.C. 85 to charge interest on loans at the rate allowed by the bank's home state.

Request for Comment

Section 114 of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 (Pub. L. 103–328, 108 Stat. 2338) generally requires the OCC to publish in the **Federal Register** a descriptive notice of certain requests that the OCC receives for preemption opinions.[6] Under section 114, the OCC must publish notice before it issues any opinion letter or interpretive rule opining that Federal law preempts the application to a national bank of any State law in four designated areas: community reinvestment, consumer protection, fair lending, or the establishment of intrastate branches. Pursuant to section 114, interested persons have at least 30 days to submit written comments. Without making a determination as to whether section 114 applies to this request, the OCC has decided that it is appropriate to use notice and comment procedures.

The OCC requests comments on the issues described above. The OCC will publish in the **Federal Register** any final opinion letter we issue in response to the requests.

Dated: October 16, 2000.

John D. Hawke, Jr.

Comptroller of the Currency.

[FR Doc. 00–27348 Filed 10–25–00; 8:45 am]

BILLING CODE 4810–33–P

[1] In the Matter of: Request by Rodney D. Martin on Behalf of National City Bank for a Declaratory Ruling on the Applicability of the Motor Vehicle Sales Finance Act to Certain Transactions (January 1, 2000).

[2] Section 2 of the MVSFA defines an ''installment sale contract'' as one ''for the retail sale of a motor vehicle, or which has a similar purpose or effect, under which part or all of the price is payable in 2 or more scheduled payments subsequent to the making of the contract * * *'' MCL 492.102(9); MSA 23.628(2)(9).

[3] MCL 492.103(a) and (b); MSA 23.628(3)(a) and (b).

[4] These include, for example, provisions concerning the form and contents of an installment sales contract, disclosures that must be made to the buyer, the amount and computation of fees and finance charges, and prohibited charges. *See* MCL 492.112–492.134.

[5] The requesters contend that the proposed financing transactions would not result installment sale contracts under the meaning of the MVSFA because the banks and their customers would be contracting for loans and not ''for the retail sale of * * * motor vehicle[s].'' The FIB, as indicated in its Declaratory Ruling, disagrees with this interpretation and considers the transactions installment sale contracts subject to the requirements of the MVSFA.

[6] 12 U.S.C. 43.

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Privacy Act of 1974; System of Records

AGENCY: Internal Revenue Service, Treasury.

ACTION: Notice of proposed new system of records.

SUMMARY: In accordance with the requirements of the Privacy Act of 1974, as amended, 5 U.S.C. 552a, the Internal Revenue Service (IRS), Treasury, gives notice of a newly proposed Servicewide system of records entitled ''Third Party

Contact Reprisal Records—Treasury/IRS 00.334'' that is being established in accordance with Internal Revenue Code section 7602(c).

DATES: Comments must be received no later than November 24, 2000. The proposed system of records will be effective December 4, 2000 unless the IRS receives comments which would result in a contrary determination.

ADDRESSES: Comments should be sent to Internal Revenue Service, Office of Governmental Liaison and Disclosure, Room 1603, 1111 Constitution Ave., NW, Washington, DC 20224. Comments will be made available for inspection and copying in the IRS Freedom of Information Act (FOIA) Reading Room. An appointment for inspecting the comments can be made by contacting the FOIA Reading Room.

FOR FURTHER INFORMATION CONTACT: Harry Manaka, National Director, Collection Field Operations, Room 7238, 1111 Constitution Avenue, NW, Washington, DC 20224. Telephone number (202) 622–5110.

SUPPLEMENTARY INFORMATION: The proposed system of records contains records concerning reprisal determinations made under 26 U.S.C. 7602(c). The IRS already has a Privacy Act system of records, Treasury/IRS 00.333, for third party contact records that are used to inform the taxpayer of third party contacts in compliance with 26 U.S.C. 7602(c). However, a second system that is exempted under a proposed rule from certain provisions of the Privacy Act is needed for records that concern reprisal determinations in order to protect third party contacts and others from potential reprisal.

The new proposed system will allow the IRS to withhold the information that there was a reprisal determination. Withholding such information will protect the third party contact.

The new system of records report, as required by 5 U.S.C. 552a(r) of the Privacy Act, has been submitted to the Committee on Government Reform of the House of Representatives, the Committee on Governmental Affairs of the Senate, and the Office of Management and Budget, pursuant to Appendix I to OMB Circular A–130, ''Federal Agency Responsibilities for Maintaining Records About Individuals,'' dated February 8, 1996.

The proposed Servicewide system of records, Third Party Contact Reprisal Records—Treasury/IRS 00.334, will be exempted from disclosure provisions of the Privacy Act under (k)(2) of the Act to protect third party contacts and others from potential reprisal. A proposed rule is being published separately in the **Federal Register**.

In addition, Treasury/IRS 00.333—Third Party Contact Records, will be altered to delete ''fact of reprisal determination'' from its categories of records, because those reprisal determination records will be covered under the proposed new system. The notice altering Treasury/IRS 00.333 will also be published separately in the **Federal Register**.

The proposed Third Party Contact Reprisal Records—Treasury/IRS 00.334 is published in its entirety below.

Dated: August 29, 2000.

W. Earl Wright, Jr.,

Chief Management, and Administrative Programs Officer.

Treasury/IRS 00.334

SYSTEM NAME:

Third Party Contact Reprisal Records.

SYSTEM LOCATION:

District Offices, Regional Offices, Service Centers, Office of Assistant Commissioner (International), and IRS Computing Centers. (See IRS appendix A for addresses.)

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Individuals on whom Federal tax assessments have been made; individuals believed to be delinquent in filing Federal tax returns or in paying Federal taxes, penalties or interest; individuals who are or have been considered for examination for tax determination purposes; *i.e.*, income, estate and gift, excise or employment tax liability.

CATEGORIES OF RECORDS IN THE SYSTEM:

Records of third party contacts as described in 26 U.S.C. 7602(c), where reprisal determinations have been made, including the taxpayer name control, taxpayer identification number, date of contact, fact of reprisal determination, and IRS personnel's identification number.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

5 U.S.C. 301; 26 U.S.C. 7602, and 7801.

PURPOSE(S):

These records will be used to track the number of reprisal determinations made pursuant to IRC § 7602(c)(3)(B).

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

Disclosure of returns and return information may only be made as authorized by 26 U.S.C. 6103 and 7602(c).

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Paper records and electronic storage media.

RETRIEVABILITY:

By taxpayer identification number.

SAFEGUARDS:

Access controls will be no less than those provided by IRM 2.1.10, Automated Information Systems Security Handbook; 1(16)12, Manager's Security Handbook.

RETENTION AND DISPOSAL:

Records are maintained in accordance with Records Disposition Handbooks, IRM 1(15)59.1 through IRM 1(15)59.32.

SYSTEM MANAGER(S) AND ADDRESSES:

Official prescribing policies and practices: Assistant Commissioner (Collection). Officials maintaining the system: Assistant Commissioner (International), Regional Chief Compliance Officers, District Directors, IRS Service Center Directors, IRS Computing Center Directors, Associate Chief Counsel, Regional Counsel, and District Counsel.

NOTIFICATION PROCEDURE:

This system of records is exempt from certain provisions of the Privacy Act.

RECORDS ACCESS PROCEDURE:

This system of records is exempt from certain provisions of the Privacy Act and may not be accessed for the purpose of determining if the system contains a record pertaining to a particular individual.

CONTESTING RECORD PROCEDURE:

This system of records is exempt from certain provisions of the Privacy Act and may not be accessed for purposes of inspection or contest of record contents. Also, 26 U.S.C. 7852(e) prohibits Privacy Act amendment of tax records.

RECORD SOURCE CATEGORIES:

This system of records is exempt from the Privacy Act provision which requires that record source categories be reported. (See ''Exemptions Claimed for the System,'' below.)

EXEMPTIONS CLAIMED FOR THE SYSTEM:

This system is exempt from 5 U.S.C. 552a(c)(3), (d)(1), (d)(2), (d)(3), (d)(4), (e)(1), (e)(4)(G),(H) and (I), and (f) of the Privacy Act pursuant to 5 U.S.C. 552a(k)(2). (see 31 CFR 1.36)

[FR Doc. 00–27413 Filed 10–24–00; 8:45 am]

BILLING CODE 4810–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Privacy Act of 1974, as Amended; System of Records

AGENCY: Internal Revenue Service, Treasury.

ACTION: Notice of alterations to an existing Privacy Act system of records.

SUMMARY: The Treasury Department, Internal Revenue Service, gives notice of proposed alterations to Treasury/IRS 00.333—Third Party Contact Records, which is subject to the Privacy Act of 1974, 5 U.S.C. 552A, as amended.

EFFECTIVE DATE: November 24, 2000.

FOR FURTHER INFORMATION CONTACT: Harry Manaka, National Director, Collection Field Operations, Room 7238, 1111 Constitution Avenue, NW., Washington, DC 20224. Telephone number (202) 622–5110.

SUPPLEMENTARY INFORMATION: The Internal Revenue Service is removing ''fact of reprisal determination records'' from the system of records Treasury/IRS 00.333—Third Party Contact Records. The reprisal determination records will be included in the ''Categories of records'' for the proposed new system of records entitled ''Third Party Contact Reprisal Records—Treasury/IRS 00.334.'' The change will allow the IRS to withhold the information that there was a reprisal determination because there is a proposed (k)(2) exemption for the Third Party Contact Reprisal Records. Withholding such information will protect the third party contact and others from situations where the taxpayer could initiate reprisal by guessing the identity of the third party contact or incorrectly identifying somebody the taxpayer believes was the third party contact. Also, under the heading ''Retrievability,'' we are clarifying that records may be retrieved by taxpayer name control.

The system notice was last published in its entirety in the **Federal Register**, Vol. 64, page 32095, on June 15, 1999. The changes to the system of records are not within the purview of subsection (r) of the Privacy Act of 1974, as amended, which requires the submission of a new or altered system report. For the reasons set forth in this preamble, the IRS proposes to amend its system of records Treasury/IRS 00.333 as set forth below.

Dated: August 29, 2000.

W. Earl Wright, Jr.,

Chief Management and Administrative Programs Officer.

Treasury/IRS 00.333

SYSTEM NAME:

Third Party Contact Records—Treasury/IRS.

* * * * *

CATEGORIES OF RECORDS IN THE SYSTEM:

Description of Change: Delete ''fact of reprisal determination''.

* * * * *

RETRIEVABILITY: * * *

Description of Change: After ''By taxpayer identification number (social security number or employer identification number)'' insert the following: ''and taxpayer name control.''

* * * * *

[FR Doc. 00–27415 Filed 10–24–00; 8:45 am]

BILLING CODE 4810–01–P

Federal Register

Wednesday,

October 25, 2000

Part II

Department of Transportation

Federal Aviation Administration

14 CFR Parts 413, 415, and 417

Licensing and Safety Requirements for Launch; Notice of Proposed Rulemaking; Proposed Rule

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 413, 415, and 417

[Docket No. FAA–2000 ; Notice No. 00–10]

RIN 2120–AG37

Licensing and Safety Requirements for Launch

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The Associate Administrator for Commercial Space Transportation of the Federal Aviation Administration (FAA), Department of Transportation (DOT), is proposing to amend the FAA's commercial space transportation regulations. The FAA proposes to amend its regulations to codify its license application process for launch from a non-federal launch site. A non-federal launch site is a launch site not located on a federal launch range. The proposed regulations are also intended to codify the safety requirements for launch operators regarding license requirements, criteria, and responsibilities in order to protect the public from the hazards of launch for launch from a federal launch range or a non-federal launch site.

DATES: Send your comments on or before February 22, 2001.

ADDRESSES: Address your comments to the Docket Management System, U.S. Department of Transportation, Room Plaza 401, 400 Seventh Street, SW., Washington, DC 20590–0001. You must identify the docket number FAA–2000–7953 at the beginning of your comments, and you should submit two copies of your comments. If you wish to receive confirmation that FAA received your comments, include a self-addressed, stamped postcard. You may submit and review comments through the Internet at http://dms.dot.gov. You may review the public docket containing comments to these proposed regulations in person in the Dockets Office between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. The Dockets Office is on the plaza level of the NASSIF Building at the Department of Transportation at the above address.

FOR FURTHER INFORMATION CONTACT: Michael Dook, Licensing and Safety Division (AST–200), Associate Administrator for Commercial Space Transportation, Federal Aviation Administration, DOT, Room 331, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 267–8462; or Laura Montgomery, Office of the Chief Counsel (AGC–200), Federal Aviation Administration, DOT, Room 915, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 267–3150.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed action by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this document also are invited. Substantive comments should be accompanied by cost estimates. Comments must identify the regulatory docket or notice number and be submitted in duplicate to the DOT Rules Docket address specified above.

All comments received, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking, will be filed in the docket. The docket is available for public inspection before and after the comment closing date.

The Administrator will consider all comments received on or before the closing date before taking action on this proposed rulemaking. Late-filed comments will be considered to the extent practicable, and consistent with statutory deadlines. The proposals in this document may be changed in light of the comments received.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this document must include a pre-addressed, stamped postcard with those comments on which the following statement is made: "Comments to Docket No. FAA–2000–7953." The postcard will be date stamped and mailed to the commenter.

Availability of Rulemaking Documents

You can get an electronic copy using the Internet by taking the following steps:

(1) Go to the search function of the Department of Transportation's electronic Docket Management System (DMS) Web page (http://dms.dot.gov/search).

(2) On the search page type in the last four digits of the Docket number shown at the beginning of this notice. Click on "search."

(3) On the next page, which contains the Docket summary information for the Docket you selected, click on the document number of the item you wish to view.

You can also get an electronic copy using the Internet through FAA's web page at http://www.faa.gov/avr/arm/nprm/nprm.htm or the **Federal Register's** web page at http://www.access.gpo.gov/su_docs/aces/aces140.html.

You can also get a copy by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267–9680. Make sure to identify the docket number, notice number, or amendment number of this rulemaking.

I. Introduction

By this notice of proposed rulemaking, the FAA proposes licensing and safety requirements for the conduct of a launch. The proposed requirements for obtaining a license would apply to a launch operator planning to launch from a non-federal launch site. A non-federal launch site is a launch site that is not located at a federal launch range. The proposed regulations for obtaining a license would not, however, apply to any launch from a non-federal launch site where a federal launch range performs the safety functions. For such a launch, the licensing requirements of 14 CFR part 415, subpart C applies. The proposed regulations are also intended to codify the safety requirements that a launch operator must satisfy to protect the public from the hazards of launch. The safety requirements contained in this proposed regulation apply to all licensed launches of expendable launch vehicles whether from a federal launch range or a non-federal launch site. This notice provides information regarding the criteria for obtaining a launch license, the responsibilities with which a launch licensee must comply, and operational requirements.

II. Background

The Commercial Space Launch Act of 1984, as codified and amended at 49 U.S.C. Subtitle IX—Commercial Space Transportation, ch. 701, Commercial Space Launch Activities, 49 U.S.C. 70101–70121 (the Act), authorizes the Department of Transportation and thus the FAA, through delegations,[1] to oversee, license and regulate commercial launch and reentry activities and the operation of launch and reentry sites as carried out by U.S. citizens or within the United States. 49 U.S.C. 70104, 70105. The Act directs the FAA to exercise this responsibility consistent with public health and safety,

[1] See Commercial Space Transportation Licensing Regulations, 64 FR 19586 (Apr. 21, 1999).

safety of property, and the national security and foreign policy interests of the United States. 49 U.S.C. 70105. The FAA is also responsible for encouraging, facilitating and promoting commercial space launches by the private sector. 49 U.S.C. 70103. A 1996 National Space Policy recognizes the Department of Transportation as the lead federal agency for regulatory guidance regarding commercial space transportation activities.

The FAA licenses commercial launches, the subject of this notice of proposed rulemaking in accordance with the Act and 14 CFR Ch. III. Until recently, all commercial launches took place under the cognizance of federal launch range safety organizations, which impose comprehensive safety requirements on launch operators. The FAA has been able to rely significantly on the safety oversight activities of the federal launch ranges. Consequently, many safety issues did not need to be addressed explicitly in the FAA's regulations. That has now changed.

The commercial space transportation industry continues to grow and diversify. Between the first licensed commercial launch in March 1989 and July 2000, 130 licensed launches have taken place from five different launch sites, including launches from a non-federal launch site, and from launch sites operated by licensed launch site operators. The vehicles have included traditional orbital expendable launch vehicles, such as the Atlas, Titan, and Delta, and sub-orbital Black Brant boosters, new expendable launch vehicles using traditional launch techniques, such as Athena and Conestoga, and unique vehicles, such as the air-borne Pegasus. The commercial launch industry has evolved from one relying on traditional orbital and sub-orbital launch vehicles to one with a diverse mix of vehicles using new technology and new concepts. A number of international ventures involving U.S. companies have also formed, further adding to this diversity.

Developments in cost savings and innovation are not confined to the launch industry. The launch site industry has also made progress. Commercial launch site operators are coming on line with the goal of providing flexible and cost-effective facilities both for existing launch vehicles and for new vehicles. When the commercial launch industry began, commercial launch companies based their launch operations at federal launch ranges operated by the Department of Defense (DOD) and the National Aeronautics and Space Administration (NASA). The Eastern Range, where the 45th Space Wing provides launch safety services, located at Cape Canaveral Air Station in Florida (CCAS), and the Western Range, where the 30th Space Wing provides launch safety services, located at Vandenberg Air Force Base (VAFB), in California are Federal launch ranges that support licensed launches. Both are operated by the U.S. Air Force. Wallops Flight Facility in Virginia, operated by NASA; White Sands Missile Range (WSMR) in New Mexico and Kwajalein Missile Range, both operated by the U.S. Army; and the Kauai Test Facility in Hawaii, operated by the U.S. Navy are other federal launch ranges that support licensed launches. Federal launch ranges provide the advantage of existing launch infrastructure and range safety services. Launch companies are able to obtain a number of services from a federal launch range, including radar, tracking and telemetry, flight termination and other launch services.

Today, most commercial launches still take place from federal launch ranges. However, the FAA anticipates that this pattern will change, as non-federal launch sites become more prevalent. On September 19, 1996, the FAA granted the first license to operate a launch site to Spaceport Systems International (SSI) to operate California Spaceport. That launch site is located within VAFB. Three other launch site operators have received licenses. The Spaceport Florida Authority (SFA) received an FAA license to operate Launch Complex 46 at CCAS as a launch site. Virginia Commercial Space Flight Authority (VCSFA) received a license to operate Virginia Spaceflight Center (VSC) within NASA's Wallops Flight Facility. Most recently, Alaska Aerospace Development Corporation (AADC) received a license to operate Kodiak Launch Complex (KLC) on Kodiak Island, Alaska as a launch site.

Whether launching from a federal launch range, a launch site located on a federal range, or a non-federal launch site, a launch operator is responsible for ground and flight safety under its FAA license. At a federal launch range a launch operator must comply with the rules and procedures of the federal range. The safety rules, procedures and practices, in concert with the safety functions of the federal launch ranges, have been assessed by the FAA, and found to satisfy the majority of the FAA's safety concerns. In contrast, when launching from a non-federal launch site, a launch operator's responsibility for ground and flight safety takes on added importance. In the absence of federal launch range oversight, it will be incumbent upon each launch operator to demonstrate the adequacy of its ground and flight safety to the FAA.

An NPRM containing licensing and safety requirements for the operation of a launch site was issued in June 1999, and that notice makes clear that a licensed launch site operator will not be playing the same role as a federal launch range. Licensing and Safety Requirements for Operation of a Launch Site, Notice of Proposed Rulemaking, 64 FR 34315 (Jun. 25, 1999) (''Launch Site NPRM''). That notice proposes specific requirements for operating a launch site, including the operation of a non-federal launch site; however, the notice proposes more limited launch site operator licensee requirements with respect to flight safety of a launch from a non-federal site. A launch site operator is not required to perform in a similar capacity as the current federal launch ranges. The FAA holds a launch licensee, not a launch site operator, responsible for flight safety, even in those cases where a launch site operator provides services in support of a launch. In that context, a launch site operator acts as a contractor or subcontractor to a licensed launch operator. The majority of public safety requirements for launch related ground and flight operations fall upon the launch licensee.

In addition to licensing the operation of the first non-federal launch site, the FAA issued, as of March 1999, its first launch license for launch from a non-federal launch site, which was, in this case, the Pacific Ocean. For this launch, no federal launch range safety review was available. Sea Launch Limited Partnership (Sea Launch), the licensee, was successful in conducting its first launch of a commercial rocket from a modified mobile oil rig located in the Pacific Ocean. Because Sea Launch does not plan to offer its launch platform or location to others for launch, the FAA did not require it to obtain a license to operate a launch site; accordingly, it needed only obtain a launch license. The FAA's approach to Sea Launch's license application was to ensure an equivalent level of safety as has been sought at the federal launch ranges. Although the foreign safety system, technology, procedures, and operations create a number of differences, the FAA was able to use the federal launch range approach as a benchmark to achieving safety for the FAA's safety determination.

The current regulations, 14 CFR part 415, governing launch primarily address launches as they take place from Department of Defense or National Aeronautics and Space Administration (NASA) launch ranges, and treat launches from a non-federal launch site on a case by case basis. The licensing regulations for launch from a federal launch range are designed to avoid duplication of effort between the FAA and the federal launch ranges in overseeing the safety of launches at the federal ranges. Although the FAA does require information and analyses not required by federal ranges to ensure that all flight safety issues are addressed, and imposes certain additional requirements derived from recommendations arising from a National Transportation Safety Board investigation, the FAA does not duplicate the safety assessments performed by federal launch ranges. The ranges require compliance with their safety rules as a condition of using their facilities and services. The federal ranges act, in effect, both as landlords and as providers of launch facilities and services. Under this notice of proposed rulemaking, that licensing approach will continue. A launch operator license applicant proposing to launch from a federal launch range will continue to be governed by subpart C of part 415. A launch operator proposing to launch from a non-federal launch site would be subject to the requirements proposed by subpart F which are, because of the lack of federal launch range involvement, more detailed in order to permit the FAA to adequately review the safety of each proposed launch.

A federal launch range requires a launch operator to provide data regarding its proposed launch. The range evaluates the data to ascertain whether the launch operator will comply with range requirements. The range also uses the data to prepare range support for the mission. DOD ranges require that a launch operator apply for and obtain specific mandatory approvals from the range in order to conduct certain specified operations. For example, the Air Force's ''Eastern and Western Range Requirements 127–1,'' (Mar. 1995) [2] (''EWR 127–1'') require a launch operator to obtain approvals for hazardous and safety critical procedures before the range will allow those operations to proceed. In the event that a launch operator's proposal does not fully comply with range requirements, a range may issue a deviation or a waiver if the mission objectives of the launch operator could not otherwise be achieved. A range may issue a deviation to allow a launch even when a launch operator's designs or proposed operations do not comply with range requirements. A range may issue a waiver when it is discovered after production that hardware does not satisfy range requirements or when it is discovered that operations do not meet range requirements after operations have begun at a federal range. A range will allow a deviation or grant a waiver only under unique and compelling circumstances.

The FAA performed baseline assessments of various federal launch ranges and found their safety services adequate. Under FAA regulations, the FAA does not require an applicant to demonstrate the adequacy of the range services it proposes to employ if the applicable baseline assessment included those federal launch range services and if those services remain adequate. Certain showings regarding the applicant's own capabilities are still required. The FAA requires specific information regarding the interface between the safety organizations of a federal launch range and of an applicant. In the event that a service or procedure upon which an applicant proposes to rely is not within the documented experience of the federal launch range that the applicant proposes to utilize, the applicant would have to demonstrate the safety of that particular aspect of its launch. This is also true if a documented range safety service has changed significantly or has experienced a recent failure. In those cases, the burden of demonstrating safety shifts to the applicant.

III. Discussion of Proposed Licensing and Safety Regulations for Launch

A. Proposed Revisions to Parts 415 and 417

The approach the FAA followed in developing technical requirements for this proposed rule is to build on the safety success of federal launch ranges and to seek the same high level of safety that the federal ranges have achieved. Wherever appropriate for public safety, federal launch range practices were used as the basis for the development of the FAA's regulatory regime. Additionally, this proposed rule would allow for flexibility through the use of performance standards where appropriate, and identifies specific technical requirements where necessary to ensure safety. The FAA worked extensively with federal launch range safety personnel to refine and adapt many of the federal range requirements to a performance standard approach for incorporation into this proposed rule. The text responds to the complexity of space launch systems and the potential for negative consequences to public safety. The proposed regulations specify detailed processes, procedures, analyses, and general safety system design requirements. Where necessary, for critical safety hardware and software, this proposed rule provides design and detailed test requirements. In every case, the proposed regulations define the material that must be prepared and submitted as part of a license application or by a licensee before launch. The FAA also proposes to build flexibility into its requirements. Although the proposed regulations would provide the requirements with which a licensee must comply, the FAA anticipates that a launch operator might wish to employ alternative means of achieving the same safety goal. In that case, if a launch operator can clearly and convincingly demonstrate an equivalent level of safety, the FAA would consider accepting that alternative, and describing it for the benefit of others through the notice, the FAA's advisory circular process or some other method.

This notice of proposed rulemaking proposes safety requirements for licensed launch, whether from a non-federal launch site or a federal launch range. It is the FAA's understanding that the U.S. Air Force launch ranges intend eventually to cross-reference the same requirements for flight for government launches. In the course of creating the requirements for this proposed rule, the FAA consulted with the federal launch ranges. As a result of these consultations, what the FAA understands to be a general sentiment within the launch community in favor of consistent requirements, and the recommendations contained in the White House's report, The Future of the Space Launch Bases and Ranges, (2000) the FAA and the Air Force plan to establish common safety standards for the flight of a launch vehicle. The FAA will implement its requirements through rulemaking, and launch operators using Air Force ranges for commercial launch would have to abide by the FAA regulations for flight safety in proposed part 417. Because the Air Force's ground safety requirements still provide greater specificity than what the FAA proposes through this notice, the Air Force does not, at this time, plan to substitute the FAA's proposed ground safety requirements for its own, but, because a launch operator will have to comply with the requirements of part 417, that launch operator will have to ensure that it complies with the FAA's proposed ground safety requirements as well. The FAA anticipates that, in most instances, satisfaction of the Air Force

[2] The latest version of these requirements may be found at http://www.pafb.mil/45SW/rangesafety/ewr97.htm.

requirements will satisfy the FAA's ground safety requirements. In the event of conflicts, the FAA's requirements will govern licensed launch operators.

Both the Air Force and the FAA anticipate tangible benefits to having common safety standards. Because the FAA is building upon the requirements of the federal launch ranges, this proposed rule is meant to preserve the best of the Air Force public safety experience and expertise. The Air Force, which has subjected its own requirements to the scrutiny and comments of its range users in the past, will be able to rely on the fact that the FAA's proposed requirements will undergo the public notice and comment period mandated by the Administrative Procedure Act. This proposed rule will provide a forum for public participation on the proposed standards and economic impacts. An FAA rulemaking requires a cost benefit analysis, which is also subject to public comment, and ensures that issues regarding cost are taken into account. The FAA, in turn, is able to leverage the technical expertise of the Air Force legacy in promulgating its requirements. The FAA and the Air Force foresee greater ease of administration for launch operators and the government, as well as greater uniformity of treatment, with a common set of national standards.

This notice proposes to establish requirements for a flight safety analysis that covers the hazards of normal and non-normal flight. The results of the analysis will be used to develop and implement flight safety rules and procedures that govern the licensed launch. The flight safety analysis is a critical tool for determining that public safety is being adequately addressed. The analysis must accurately reflect the true circumstances of each launch. Consequently, the proposed rules would specify performance standards for each critical part of a flight safety analysis as well as identifying the specific safety criteria that must be met.

This notice would cover a number of major flight safety analysis issues. Flight control lines are necessary for a flight safety analysis. Establishing flight control lines involves the identification of those areas that must be protected from potential adverse effects of a launch vehicle's flight. Flight control lines are material input to the flight safety analysis and the determination of flight safety limits. They depend on the location of population centers, foreign territorial boundaries, and other areas that must be protected. Flight safety limits are used during a launch to determine when a malfunctioning vehicle's flight must be terminated to ensure that any adverse effects are contained. Flight safety limits may be a function of time and depend on the vehicle's debris footprint.

This notice of proposed rulemaking addresses other flight safety measures. For example, wind weighting is a technique used to determine launch azimuth and elevation settings for unguided launch vehicles, which are typically sub-orbital sounding rockets. Wind weighting predicts the wind effects on impact point displacement during the thrusting phases of flight as well as the ballistic free-fall phase of each launch vehicle stage.

Hazard areas must be established for both preflight processing of a launch vehicle and flight. Hazard areas are established to provide protection from both normal and anomalous launch events. The presence of the public in a hazard area is a constraint on preflight processing and flight, and must be controlled, typically by controlling access to the area or through flight commit criteria that depend on real-time surveys of the area at the time of flight. This notice proposes to specify the analysis that a license applicant must perform to define the appropriate hazard areas for each launch. These hazard areas generally include a launch hazard area that accounts for people, aircraft, and any ships, impact hazard areas for planned debris resulting from normal flight, and hazard areas for unique hazards such as toxic or radiological materials.

An applicant must demonstrate satisfaction of the FAA's risk criteria. This may be accomplished if a launch operator is able to show that the risk of casualties to the general public is acceptably low. An applicant must show that the collective casualty expectancy (E_C) risk of the proposed launch is equal to or less than the FAA's established criteria of 30×10^{-6}. This is a critical measure used to evaluate potential public risk due to a proposed launch. An applicant must also show that its proposed launch will be conducted without exceeding an individual casualty probability (P_C) of 1×10^{-6}. Not all federal launch ranges require an individual risk analysis. In most cases, if 30×10^{-6} is met, individual risk is also less than 1×10^{-6}. This is not, however, always the case. The need to evaluate individual risk varies depending on the specifics of the launch and the launch site. Because FAA regulations must address the broad range of non-federal launch sites and launch vehicle combinations, the FAA proposes to require a launch operator to demonstrate that the individual risk criteria will not be exceeded for each launch regardless of whether the launch occurs from a non-federal launch site or a federal launch range. This notice will provide a method for accomplishing these analyses and allow for variations and possible simplifications to the analysis based on the applicant's specific situation. The applicant would perform risk analysis to demonstrate that each proposed launch will not exceed established criteria for the impact probability of hitting aircraft and ships.

The other essential component for flight safety is a flight safety system. The primary purpose of a flight safety system is to monitor a launch vehicle's flight status and provide the positive control needed to prevent the launch vehicle from impacting populated or other protected areas in the event of a vehicle failure. The requirements for properly qualifying the proposed flight safety system and validating its performance are critical. Comprehensive flight safety system requirements will be provided that are designed to ensure that a launch operator implements a highly reliable, acceptable system.

This proposed rulemaking addresses important components of and major issues related to a flight safety system. A typical flight safety system is composed of a flight termination system and a command control system. This notice proposes to define a flight termination system (FTS) as consisting of all components that are on board a launch vehicle and are needed to control the termination of a launch vehicle's flight. An FTS may also include automatic destruct system components designed to activate upon vehicle breakup or premature separation of individual powered stages or strap-on motors. This notice proposes requirements for the FTS components onboard a launch vehicle as well as command control components that are typically ground based, including associated software. A highly reliable FTS is critical to ensuring public safety. This notice would define a process for obtaining the necessary reliability. That process would consist of specific FTS design standards and criteria, a reliability analysis of the FTS design, and comprehensive testing to qualify the FTS design and certify and accept FTS components.

The proposed requirements would also address other elements of the flight safety system. This notice of proposed rulemaking would include requirements for compatible vehicle tracking, visual data sources, telemetry, communications, display, and recording systems that are necessary as part of the flight safety system to support a flight termination decision. The licensee would be responsible for ensuring that these required systems are available to support the launch. A flight safety system must be complemented with, and operated by a qualified flight safety crew that includes a flight safety official and support personnel. This proposed rule would identify the flight safety crew positions and the personnel qualifications required for each position. The FAA's proposed training and qualification approach is an adaptation of federal launch range practices.

This notice also addresses ground safety issues related to the preparation of a launch vehicle for flight. Many issues related to the safety of ground operations at a launch site are subject to regulation by other federal agencies. This notice would address ground safety issues, not otherwise addressed by other federal regulations, that are unique to space launch processing and that could affect the general public. A launch operator licensee would be responsible for developing and implementing a ground safety program in compliance with the specified standards, and should note that this proposed rulemaking does not supersede the ground safety requirements of other regulatory agencies.

Ground safety issues may be addressed through a number of measures in this notice. This proposed rulemaking includes a hazard assessment to ensure the safety of ground operations. A launch operator would be required to perform a hazard analysis for all hazardous operations to identify the potential of each hazard for affecting public safety. This proposed rulemaking would define requirements, processes, and procedures for mitigating identified public safety hazards. Launch processing typically involves the use of toxic and hazardous materials. This proposed rule would define ground safety program requirements designed to protect the public from these substances. The use of non-ionizing radiation in the form of communications and radar systems is also typical of launch processing. Proper control of such sources of energy is of particular concern due to the many explosives that could be inadvertently initiated and that are often present at a launch site. This proposed rulemaking would define ground safety program requirements designed to protect the public from non-ionizing radiation. A launch vehicle or payload may include materials that give off ionizing radiation. The presence of ionizing radiation is a safety issue that must be reviewed for each launch and requires that proper procedures be followed. There are many ground safety issues involving explosives associated with launch processing. The NPRM on licensing and safety requirements for the operation of a launch site addresses locating explosive substances at a launch site, and identifies appropriate safety separation distances, based on quantity, between facilities at the site and the public. In most cases, maintaining proper separation distances will provide protection for the general public. This proposed rulemaking would define ground safety program requirements for protecting the public from explosives through the maintenance of proper separation distances during operations and preventive explosive safety processes and procedures, including prevention of inadvertent initiation of explosives and propellants.

B. Payload Review and Determination

The proposed requirements address hazards that a payload may create during launch. This proposed rulemaking continues the agency's practice of addressing hazards presented by payloads during the flight of a launch vehicle. This includes payloads otherwise exempt from a payload review. The FAA wishes to clarify that flight safety analysis includes even those payloads exempted by 14 CFR 415.53, and is proposing to amend the text of § 415.51 to clarify accordingly. As is evident from inspection of the neighboring provisions, sections 415.51 (''the FAA reviews a payload proposed for launch to determine whether its launch would jeopardize public health and safety'') and 415.53 (''each payload is subject to compliance monitoring to determine whether its launch would jeopardize public health and safety''), the FAA intended to include safety issues within a payload review. Nonetheless, in order to avoid confusion, the FAA proposes to amend § 415.51 to state that all payloads, exempt or not, are subject to the safety requirements of subparts C and F of this part and of part 417. This should make clear that the exemption of Federal Communications Commission (FCC) or National Oceanic & Atmospheric Administration (NOAA) regulated payloads or those owned or operated by the U.S. Government applies to the payload determination and not to the safety reviews or requirements.

The Act provides the FAA authority over payloads. *See* 49 U.S.C. 70104; Commercial Space Transportation; Licensing Regulations, Interim Final Rule, 51 FR 6870, 6871 (Feb. 26, 1986) (''The Act gives the [agency] authority to determine whether the launch of a payload is inimical to the national interests specified in the Act and does not exclude any relevant factor from the [agency's] consideration.'') The commercial space transportation regulations implemented this authority, first, through a mission review, *see* 14 CFR 415.21–415.25 (1988), and then through the payload review adopted in 1999, *see* 14 CFR 415.51–415.63 (1999).

The Act also contains provisions describing the authority of various agencies with regard to certain payloads. The Act does not affect the authority of the FCC or the Secretary of Commerce under the Land Remote-Sensing Commercialization Act of 1984. 49 U.S.C. 70117(b). This means that these agencies may continue in their regulation of communications satellites and land remote sensing satellites. Accordingly, the FAA does not conduct a payload review of payloads that are subject to regulation by the Federal Communications Commission or the Department of Commerce, National Oceanic and Atmospheric Administration, or that are owned or operated by the U.S. government. This means that the FAA does not review those payloads for their impact on the national interests identified in the Act.

The FAA does, however, possess and exercise safety authority over issues presented by payload hazards during flight of a launch vehicle. The FAA recognizes that the legislative history accompanying the requirement in 49 U.S.C. 70104(b) that a licensee may launch a payload only if the payload complies with the requirements of the laws of the United States related to launching a payload, indicates that Congress did not want communications or land remote sensing satellites subjected to a duplicative regulatory process. See Commercial Space Launches, Sen. Committee Rep. No. 656, 98th Cong., 2d Sess., 15 (1984). The Committee recognized, for example, that the FCC provided authorization for the launch of a communications satellite and would therefore require no separate ''documentation or certification'' by the FAA. *Id.* Nor did Congress intend that the FAA obtain the authority ''to override or modify any decision by the FCC to authorize the launch or operations of a communications satellite.'' *Id.* at 16. The FAA does not purport to authorize the operation of communications satellites. That is why the exemption in § 415.53 exists. What the FAA does require, however, is information sufficient to evaluate the safety of a proposed launch. The FCC and NOAA do not analyze the launch safety of communications or land remote sensing satellites. Accordingly, the FAA's proposed safety requirements would not constitute duplicative regulation.

If the payload hazards dictate a change in commit criteria, trajectory or other safety related decision, the launch operator and the FAA need to be able to assess and respond to the hazards posed by the satellite. A satellite's hazards may consist of fuel, debris or both. In this regard the FAA notes that the Senate Committee, in discussing the agency's authority to issue an emergency order stopping a launch, recognized that the agency could have concerns "that may relate to the launch vehicle or its payload." *Id.* at 24. This explicit recognition of the FAA's ability to respond to payload concerns supports the FAA's interpretation of the Act: subsection 70117(b) provides that the authority of the FCC and NOAA remain unaffected by the Act, but means nothing more than that. Although the FAA should not duplicate the roles of the FCC or NOAA, it may address areas not otherwise encompassed by their regulatory schemes, namely, the safety issues surrounding any particular launch. Accordingly, the FAA will continue to address payload safety issues that relate to the transport, or launch, of a payload, regardless of whether the payload is within the jurisdiction of the FCC or NOAA or whether it is owned or operated by the U.S. Government.

C. Safety Review for Launch From a Non-Federal Launch Site

Under current practice, the FAA requires a safety review for launch from a non-federal launch site. By this proposed rulemaking, the FAA proposes to codify its requirements for the safety review. Proposed part 417 contains the safety requirements with which a licensee must comply. Part 415, subpart F, would require a license applicant to demonstrate how it will satisfy the requirements of part 417 in order to obtain a license. The FAA would issue a safety approval if an applicant demonstrated that it would meet the safety responsibilities and requirements for launch. The safety review would require an applicant to submit data, prepare test plans, conduct and supply analyses and do so in accordance with specified timetables.

Not unlike what a launch operator must submit to a federal launch range in order to launch from a site such as Cape Canaveral or Vandenberg Air Force Base, a launch operator must demonstrate that it will satisfy the FAA's regulatory requirements. A launch operator will notice some differences. The same work will be performed, but by different entities. Where, for example, a federal launch range will perform much of the flight safety analysis for a launch operator to launch, the lack of a federal range and the proposed requirements would settle that task upon the launch operator. In the course of its safety review, the FAA will review the launch operator's information for validity and accuracy.

D. Part 417, Launch Safety

This proposed rulemaking clarifies the roles and responsibilities of a launch operator licensee. It specifies that a launch operator is responsible under an FAA license for the safety of the flight of its launch vehicle and the launch processing, or preparation of that launch vehicle for flight, at a U.S. launch site.

A launch license encompasses both the flight of a launch vehicle, referred to in common parlance as "launch," and the launch processing of that vehicle. One of the idiosyncrasies of the Act is its definition of "launch." The Act defines launch not only as including the flight of a launch vehicle, but as including activities "involved in the preparation of a launch vehicle or payload for launch, when those activities take place at a launch site in the United States." 49 U.S.C. 70102(3). Accordingly, a launch license covers flight and launch processing, and a launch operator is responsible for the safety of both.

This proposed rulemaking also clarifies a number of issues of which a launch operator must be cognizant. A launch license does not relieve a licensee of other legal obligations. Under 49 U.S.C. 70105(b), unless otherwise provided by that subsection, all requirements of the laws of the United States applicable to the launch of a launch vehicle are license requirements as well. Additionally, this proposed rulemaking would impose on a launch operator the requirement to coordinate with a launch site operator in order for the launch site operator to satisfy its regulatory obligations.

The proposed requirements also highlight the interplay between the application process and compliance with the obligations of a licensee. Because the FAA grants a license based on the representations contained in a launch operator's license application, part of a licensee's obligations under its license are to ensure the continuing accuracy of all material representations. The FAA proposes to impose affirmative verification measures in order to ensure that a launch operator is operating as it represented it would.

In order to outline the proposed regulations, proposed subpart B of part 417 would serve as a guide to other parts of the regulations. It summarizes what a launch operator needs to address to achieve public safety and refers to the particular subpart, section and appendices that contain detailed requirements. This subpart would address a launch operator's safety organization, safety personnel and codify various criteria for the risks and hazards associated with launch.

E. Flight Safety Analysis

1. Introduction

A launch operator would be required to perform flight safety analysis to demonstrate how it would monitor and control risk to the public from hazards associated with normal launch vehicle flight and the potential hazards associated with the flight of a malfunctioning launch vehicle. The proposed regulations would require that a launch operator's analysis consist of a number of separate analyses, both deterministic and probabilistic in content and intent. For all expendable launch vehicles, a launch operator's flight safety analysis would determine the conditions under which the vehicle could be launched safely by demonstrating that the risk associated with the launch satisfied the public risk criteria. In addition, for a launch vehicle flown with a flight safety system as a means of ensuring public safety, the flight safety analysis would define the conditions that would dictate whether or not the flight of the launch vehicle had to be terminated due to safety considerations.

During the licensing process, the FAA would require a launch operator to submit the products of its analysis to demonstrate that the launch operator performed the required analyses properly and has the ability to conduct a launch safely. After licensing, the FAA would also require a launch operator to submit analysis products for each individual launch to provide the data that the FAA would use to verify a launch operator's compliance with the regulations and the terms of the license for each launch. The proposed analyses would thus demonstrate both capability and specific compliance. This has proved to be a successful process historically. The FAA does not, however, foreclose the possibility that a launch operator could dispense with one or more of the proposed analyses through innovation or the applicability of a previously performed analysis for a past mission to a planned mission. Nonetheless, the FAA would require the products of each of these analyses to verify their validity for those launch operators employing the more traditional approaches, and to serve as a benchmark against which to measure any alternative approach that a launch operator proposes.

2. Flight Safety Analysis for Launch Vehicles That Use a Flight Safety System to Achieve Public Safety

A launch operator would perform a series of analyses to define the extent of its launch vehicle's capabilities and hazards, both during normal flight and in the event of a malfunction. A launch operator would perform a trajectory analysis to determine a launch vehicle's planned nominal trajectory and the potential three-sigma trajectory dispersions about the nominal trajectory. The three-sigma dispersions, which routinely include the effects of winds on a launch vehicle, about the nominal trajectory define the extent of normal flight. A launch operator would perform a malfunction turn analysis to determine how far a launch vehicle's instantaneous impact point can deviate from the nominal trajectory when a malfunction occurs. A launch operator would perform a debris analysis that identifies inert, explosive, and other hazardous launch vehicle debris, such as toxic debris or debris that produces ionizing radiation, resulting from a launch vehicle malfunction and from any planned jettison of launch vehicle components. A launch vehicle's capabilities and hazards may be significantly affected by winds experienced during flight. A launch operator would perform a wind analysis to determine wind magnitude and direction as a function of altitude for the air space through which the launch vehicle will fly and for the airspace through which any malfunction and jettisoned debris may fall.

The launch operator would perform an analysis to establish flight control lines that define where a launch vehicle would be allowed to fly. As part of this analysis, the launch operator would assess the surroundings of its proposed launch site and trajectory to identify the boundaries of populated and other areas requiring protection from the potential adverse effects of the launch vehicle's flight, including, its possible breakup, whether commanded or accidental. The proposed regulations would require a launch operator to border the identified populated and other areas requiring protection with flight control lines, thus defining the region within which the launch vehicle and any breakup and jettisoned debris must be contained.

The FAA reviewed a recent National Academy of Sciences (the Academy) study that recommended that the federal launch ranges create their impact limit lines, which correlate fairly closely to the FAA's own proposed flight control lines, on the basis of risk. Streamlining Space Launch Range Safety, 22, National Research Council (Apr. 2000) (''Streamlining Safety''). The Academy recommended, among other things, that destruct lines be defined and implemented in a way that is directly traceable to accepted risk standards, including collective (E_C) and individual risk. The Academy took exception to the creation of impact limit lines on the basis of risk avoidance. *Id.* at 20 (citing EWR 127–1, par. 2.3.6: ''Whenever possible, the overflight of any inhabited landmasses is discouraged and is approved only if operational requirements make overflight necessary, and risk studies indicate probability of impact and casualty expectancy are acceptable.'') The FAA finds that it cannot pursue this recommendation. In the context of impact limit lines, the report makes no case for basing a decision as to what requires protection on the basis of risk. Instead, it ignores the portion of EWR 127–1 that permits overflight on the basis of risk through the creation of gates, which are the width of a destruct line opened for a normally performing vehicle,. Gates are acceptable only if risk levels are acceptable. EWR 127–1 at par. 2.3.6. The FAA proposes, like the federal launch ranges, to require the protection of populated areas, and permit the creation of gates as an exception to the flight control lines requirement. If the Academy means to suggest that impact limit lines or flight control lines should be created on the basis of risk, the Academy did not suggest how this should be accomplished or provide a justification. The FAA is also troubled by the possibility that the Academy recommendation could mean that certain populated areas and members of the public near a launch site would no longer benefit from being protected from a malfunctioning launch vehicle. The FAA does not believe that the Academy intended to distinguish between the levels of protection some members of the public are afforded. Accordingly, the FAA will not seek to deviate from the federal launch range approach to the creation of either impact limit lines or, as the FAA proposes, flight control lines.

The launch operator would perform a series of analyses to determine the conditions that would require termination of a launch vehicle's flight and to establish flight termination rules. Unless otherwise approved during the licensing process, the proposed regulations would require a launch operator to employ a traditional U.S. flight safety system where flight termination is accomplished by destroying the launch vehicle and ensuring that any resulting hazards are contained within an area that is isolated from the public. In general, if a launch vehicle strays off course, it must be destroyed or its thrust terminated before the vehicle, payload, or resulting debris is able to impact any populated or other protected area outside the established flight control lines.

A launch operator would perform a flight safety limits analysis and institute flight termination rules to establish the conditions under which the launch operator would have to terminate a malfunctioning launch vehicle's flight to ensure that the launch vehicle's debris impact dispersion does not extend beyond the flight control lines, or conflict with the risk criteria. A launch operator's flight safety limits analysis would have to account for any time delay that exists between recognizing that a malfunction has occurred, the point in time that a flight termination command is sent and the launch vehicle's destruction. A launch operator would perform a time delay analysis to determine the elapsed time, including an allowance for the flight safety official's decision and reaction time, between the start of a launch vehicle malfunction or violation of flight safety limits and the final motion of the vehicle's impact point or commanded flight termination.

Additional proposed analyses would address other conditions requiring termination of flight. If a launch vehicle malfunctions and flies a vertical or near vertical trajectory, usually referred to as a straight-up trajectory, rather than following a normal trajectory downrange, a launch operator would perform a straight-up time analysis to determine the latest time-after-liftoff by which flight termination must be initiated. If a launch operator lost all launch vehicle tracking data and did not regain tracking data for an amount of time sufficient for a launch vehicle to reach a populated or other protected area, the launch operator would have to terminate flight. A launch operator would perform a data loss flight time analysis to determine the shortest elapsed thrusting time during which a launch vehicle could move from its normal trajectory to a condition where the public might become endangered.

The FAA would permit flight over any populated or other protected area if a launch operator establishes a gate through a flight control line or other flight safety limit boundary. A launch operator would perform an analysis to determine any gate in a flight control line or other flight safety limit boundary, through which a launch vehicle would be allowed to pass without a launch operator being required to terminate flight. A launch operator would have to perform a risk analysis to determine whether the overflight permitted by the gate was acceptable and satisfied the risk criteria.

The FAA wishes to caution its licensees that proposed changes in the African gate may affect certain launches, and requests comments from its licensees on the possible impacts. A licensed launch operator would have to satisfy the requirements of proposed part 417. That would include the requirements governing the creation of a gate. The National Academy of Sciences report recommended that the Air Force consider not retaining downrange equipment and facilities in support of the African or other gates. Streamlining Safety at 24. If such a move conflicted with the FAA requirements governing creation and use of a gate, a launch operator would have to provide its own support for any launch employing the gate.

The FAA's proposed requirements would require a launch operator to terminate the flight of an abnormally performing launch vehicle prior to permitting land overflight. The Academy pointed out, without quantifying the costs, that the current downrange equipment that supports a termination decision is expensive. Streamlining Safety at 20. The Academy also noted that coordinating launches with remote facilities complicates range safety operations and increases the risk of delay. *Id.* The Academy also maintained that the need for downrange facilities was not necessary from a safety perspective. The FAA requests public comment on the Academy's position in light of the considerations addressed below.

The Academy argued for removal of the downrange facilities from a safety perspective. It stated that several factors suggested that the risk standard could still be satisfied with fewer facilities. In pursuit of this argument, the Academy reviewed the collective risk associated with launch of an Atlas. Streamlining Safety at 20–22. It did not, however, address launches that might present worst case scenarios such as the evolved expendable launch vehicles, whose flight time and opportunity for some type of malfunction between last contact and the commencement of overflight will be correspondingly greater, and whose instantaneous impact point range rate will be slower and whose dwell time over Africa or Europe will increase proportionately. Accordingly, the FAA believes that before it is possible to determine whether downrange facilities are superfluous to safety that a good analysis would consider the contribution of the overflight of launch vehicles other than an Atlas to the total mission risk, and whether those contributions would result in E_C being exceeded.

Additionally, although Streamlining Safety quantifies the probability of impact to Africa, it does not provide the expected casualty contribution of that overflight. Instead, it cites a report regarding downrange risks created by an Athena or Titan launch vehicle for the proposition that ''the risks from flying over Africa appear to be well within the standard acceptable for the U.S. population.'' *Id.* at 21 (citing ''Estimation of Downrange Risks for Northeast Titan and Athena Launches,'' Research Triangle Inst., Ward (1997)). Whether these conclusions apply to an Atlas launch vehicle as well is unclear. Additionally, it is unclear whether the Academy's observations regarding the risks associated with the remainder of a launch mean that the Academy is aggregating the mission risks as it should, or applying different E_c thresholds to the populations of different continents. The FAA would appreciate any available clarification to this possible ambiguity.

Additionally, the FAA believes that the relationship of downrange risk analysis and the African Gate needs further clarification. When performing a risk study, the federal launch ranges do not look at regions of overflight unconstrained, but rather narrows their analysis to a hazard corridor defined in part by the width of the African or European Gate. In fact, because most launches are over the less densely populated southern half of Africa, moving the gate uprange could enlarge the hazard corridor for overflight and include higher population centers. Determining a gate, which is the width of a destruct line opened for a normally performing vehicle, would become dependent on the region of overflight for which risk has been accepted and the modes of failures considered in the risk analysis. Thus, by moving the gate further uprange, a concern over the proper gate width is created and needs to be defined. Should this be based on some limited vehicle performance, such as three-sigma performance, as suggested by the Academy's references to Western Range restrictions of flight azimuths, or more in terms of the maximum performance that will still allow orbital insertion as implemented by the Eastern Range? The latter is less restrictive than three-sigma vehicle performance requirements and allows larger overflight regions than if based strictly on three-sigma performance.

In accordance with this notice of proposed rulemaking, a launch operator would also perform a series of analyses to determine the safety conditions and criteria under which the flight of a launch vehicle might be initiated. A launch operator would perform a flight hazard area analysis to determine the land, sea, and air regions that would have to be publicized, monitored, controlled, or evacuated at the time of flight in order to inform the public and comply with the risk criteria in the event of planned and unplanned launch vehicle flight events. The hazard area analyses would contain both probabilistic and deterministic elements and would provide the launch operator the information necessary to establish exclusion, notice and surveillance zones, as well as other information required for flight commit criteria, which are the criteria which must be satisfied prior to flight. In order to meet flight commit criteria, a launch must comply with both the individual and collective risk criteria during planned and unplanned launch vehicle flight events. Hazard area analysis would include a blast hazard area analysis and determination of ship, aircraft, and individual risk hazard areas. A launch operator would perform a debris risk analysis to determine the expected average number of casualties to the collective and individual members of the public exposed to inert and explosive debris hazards from the proposed flight of a launch vehicle. This analysis would include an evaluation of risk to populations on land, including regions of launch vehicle flight following passage through any gate in a flight safety limit boundary. A launch operator would perform a toxic release analysis to determine the extent and amount of any public hazard resulting from any potential toxic release during preflight processing and flight of a nominal or non-nominal launch vehicle and to develop launch safety rules, including flight commit criteria to protect the public from any potential toxic release. A launch operator would perform a distant focus overpressure blast effects risk analysis to demonstrate that the potential public hazard resulting from impacting explosive debris would not cause windows to break with related injuries. This analysis would also contribute to any flight commit criteria necessary to comply with the public risk criteria.

Further discussion on the distant focus overpressure blast effects risk analysis is provided in section III.E.5 of this discussion.

A launch operator would obtain a conjunction on launch assessment performed by United States Space Command to identify any periods of time, referred to as ''waits,'' within a planned launch window, during which period flight would not be permitted in order to maintain a 200-kilometer separation between the launch vehicle and any inhabitable orbiting object.

3. Aircraft and Ship Hazard Areas for Guided Launch Vehicle and Unguided Suborbital Rocket Launches

The proposed regulations would require a launch operator to determine aircraft and ship hazard areas. Near the launch point, these hazard areas would constitute part of a flight hazard area. Outside the flight hazard area, aircraft and ship hazard areas would be necessary to protect against planned stage impacts and other intentionally ejected debris such as a fairing, payload, or other component. The FAA proposes requirements for launch operators to provide information for public notification of aircraft and ship hazard areas, and proposes requirements for when such hazard areas would have to be surveyed to ensure that the public risk criteria are satisfied for each launch.

a. *Aircraft hazard areas.* For the protection of aircraft during flight of a guided launch vehicle or an unguided suborbital rocket, the FAA proposes to require that a launch operator initiate flight only if the probability of the launch vehicle or debris impacting any individual aircraft that is not operated in direct support of the launch does not exceed an individual probability of impact of 0.00000001 ($P_i \leq 1\times10^{-8}$).

For the immediate area around the launch point, the proposed regulations would require a launch operator launching a guided launch vehicle to establish an aircraft hazard area. The aircraft hazard area would consist of and encompass the air space region defined by the flight hazard area, which would, in turn, encompass an aircraft-hit contour that shows where the probability of impacting an unrelated aircraft would exceed 1×10^{-8}, with an altitude extending from zero to 60,000 feet. For an unguided suborbital rocket, for the protection of aircraft, a launch operator's flight hazard area would be required to encompass the unguided suborbital rocket's three-sigma trajectory dispersion in the air space region from the Earth's surface at the launch point to an altitude of 60,000 feet.

For each downrange planned impact of a launch vehicle stage or component, the proposed regulations would require a launch operator to establish aircraft impact hazard areas to ensure that the 1×10^{-8} criterion is satisfied. The proposed regulations would also require that an aircraft hazard area for a planned impact encompass the three-sigma dispersion of the impacting launch vehicle stage or component. This requirement is intended to provide a high level of assurance both that a hazard area encompass the planned debris within the hazard area and that risk remains at acceptable levels. The FAA proposes that a launch operator ensure that an aircraft hazard area encompasses an air space region that contains the larger of the three-sigma impact dispersion ellipse or an ellipse, where, if an aircraft were located on the boundary of the ellipse, the probability of hitting the aircraft would be less than or equal to 1×10^{-8} and the debris path from an altitude of 60,000 feet to impact on the Earth's surface. This would ensure that a hazard area encompasses where the debris would fall and confines the area of risk. This requirement would apply to planned impacts from both guided launch vehicles and unguided suborbital rockets. A launch operator would have to ensure through communication with the FAA's air traffic control (ATC) facility having jurisdiction over the affected airspace that notices to airmen were issued and in effect at the time of flight for each aircraft hazard area.

Although an aircraft hazard area serves, through notices to airmen, to exclude or warn away aircraft from travelling too close to a launch, the size of that hazard area is usually determined through probabilistic means, and the FAA proposes to continue that practice. In other words, no aircraft would be allowed where the risks of impact are too great. Under current practice the federal launch ranges provide the air traffic control facility the outlines of an aircraft hazard area of which aircraft are notified. The federal launch ranges determine those aircraft hazard areas on the basis of the risk presented. NASA's Wallops Flight Facility implements an aircraft hit probability that equates to an individual aircraft hit probability of 1×10^{-8}. *See* Range Safety Manual for Goddard Space Flight Center/Wallops Flight Facility, RSM–93, 24 (1993) (applying 1×10^{-7} criteria to 10 aircraft). Although EWR 127–1 does not contain an impact probability criteria, the Western Range employs an aircraft hit probability of 1×10^{-8} for planned impact hazard areas. Through this notice, and consistent with current practice as articulated by Wallops and the Western Range, the FAA proposes to follow the same course.

In its report on space launch range safety, the National Academy of Sciences suggested 1×10^{-6} as the appropriate measure of probability of impact. Streamlining Safety at 38. The Academy maintained that its proposal was more consistent with the individual ship hit impact probability criteria and E_c. *Id.* The FAA understands that the 1×10^{-6} aircraft hit criterion is used by some federal ranges for aircraft that support a launch such as weather and launch surveillance aircraft. This criterion does not account for the large numbers of people that may be aboard an aircraft not involved in the launch. Because the FAA wishes to maintain the same level of public safety as achieved by the federal launch ranges, the FAA is not proposing the suggested measure, which constitutes an increase in risk to the public.

There is one special situation that arises in the context of suborbital rockets, and that has led the FAA to consider permitting a launch operator to propose the creation of alternate aircraft hazard areas. The large dispersions of some unguided suborbital rockets' planned impact points create a conundrum. The requirements for creating an aircraft hazard area unearthed certain incongruities where, on the one hand, satisfaction of the probability of impact criteria would create a hazard area of no significant size at all; while, at the same time, employing the criteria for the aircraft hazard area to contain the three-sigma impact dispersion could result in a hazard area that is prohibitively large to implement. The FAA proposes to resolve this difficulty through creation of an alternate hazard area.

For the launch of an unguided suborbital rocket, if the impact of a stage or component has a three-sigma dispersion that results in an aircraft hazard area that is prohibitively too large to implement with the ATC, a launch operator may employ an alternate aircraft hazard area. The FAA proposes that a launch operator provide a clear and convincing demonstration, through the licensing process, that any alternate aircraft hazard area provides an equivalent level of safety based on further analysis of the proposed launch and potential air traffic in the launch area.

b. *Ship hazard areas.* Through this notice of proposed rulemaking, the FAA proposes requirements designed to keep a launch vehicle and its components from impacting ships when launching over water. A launch operator must identify where its launch vehicle's stages or other planned ejected debris or debris from a launch vehicle failure will impact, the corresponding ship hazard areas, whether the launch operator needs to survey the hazard areas for ships, and whether risks at the time of flight require that a launch operator wait until any ships have passed from a ship hazard area before initiating flight.

The standards governing the identification, surveillance and notice requirements for hazard areas for ships differ among the federal launch ranges based on their individual needs. The FAA's proposed requirements are an adaptation of the approaches used at the federal ranges resulting in a universally applicable approach. In accordance with the proposed requirements a launch operator would determine the collective probability of impacting a ship in the flight hazard area around the launch point and for each planned downrange impacting stage or component. The launch operator would perform a collective ship-hit analysis to determine the ship hazard areas and flight commit criteria and to determine whether the launch operator must survey the ship hazard areas. A launch operator would be permitted to initiate flight under these requirements only if the collective probability of impacting any ship would be less than or equal to 1×10^{-5}. If a launch operator demonstrates, using statistical ship density data, that the collective ship-hit probability in the flight hazard area around the launch point or for the planned impact of a stage or component is less than or equal to 1×10^{-5}, a launch operator would not need to survey the hazard area on the day of flight. Due to the uncertainty associated with statistical ship density data, the FAA is proposing that any ship density data obtained from a statistical source must be multiplied by a safety factor of 10 when used for any collective ship-hit probability analysis. This is because statistical density information is generally an average figure, does not reflect variances in time and is typically subject to limitations or other biases associated with deriving the density. If the launch operator fails to demonstrate that the collective ship-hit probability for the flight hazard area or an impacting stage or component is less than 1×10^{-5}, using statistical ship density data, the launch operator would be required either to compute the probability of hitting the actual ships surveyed on the day of flight or define ship-hit contours and ellipses, which the launch operator would be required to survey for ships on the day of flight.

The proposed requirements would permit a launch operator to launch only if the collective probability of hitting any ship was less than or equal to 1×10^{-5}.[3] A launch operator would determine this probability in one of two fashions. Under the first approach, a launch operator would, on the day of the planned flight, survey the ships in the vicinity of the flight hazard area and any planned impacts within 30 minutes of flight, and compute the probability of hitting a ship based on the number of ships surveyed. The analysis would account for the changes in impact locations resulting from any wind weighting operations on the day of flight, the speed of each ship in the vicinity of the impact area, and the ships' predicted location at the time of liftoff. The analysis would have to demonstrate that the collective probability of hitting a ship during flight was less than or equal to 1×10^{-5} in order for flight to occur.

If a launch operator preferred to conduct the analysis in advance of the day of flight, the launch operator could demonstrate that its launch would take place in accordance within the limit on the probability of impact by creating ship hit contours in the flight hazard area and ship-hit ellipses around each planned impact point. Ship-hit contours and ellipses would be required for one through ten ships in increasing increments of one ship. For a given number of ships, the associated ship-hit contour or ellipse would be required to encompass an area where if the ships were located on the boundary of the contour or ellipse, the probability of impacting one of the ships would be less than or equal to 1×10^{-5}. The launch operator would then survey on the day of launch to ascertain that less than the corresponding number of ships were present within each contour and ellipse. The launch operator would also have to create flight commit criteria that accounted for the winds used in the analysis in order to ensure that flight did not take place unless the winds on the day of flight were within the winds used in the analysis.

Through this rulemaking, the FAA proposes a refinement to the notice and surveillance requirements, as they are implemented at the federal launch ranges. As under current practice, the FAA proposes to require satisfaction of the 1×10^{-5} collective ship-hit criterion in order for flight to occur. What would change is the nature of the verification required. Today at the federal launch ranges, surveillance takes place for ships in the vicinity of the launch point. The ranges do not survey downrange planned impact points because they assume that ship density is significantly less in those downrange locations. Through this notice, the FAA would require a launch operator desirous of avoiding surveillance in the flight hazard area or downrange planned impact areas to obtain confirmation of the density of ship traffic and demonstrate that the probabilities of impact for each launch are below 1×10^{-5}, and the FAA would permit the use of statistical ship density data. Due to the uncertainty associated with any statistical ship density data and to make up for the lack of real-time surveillance, the FAA is proposing that any ship density obtained from a statistical source would have to be multiplied by a safety factor of 10 when used for the required collective ship-hit probability analysis. The FAA anticipates that in most cases of downrange planned impact, the criteria will be satisfied and that surveillance will continue not to be necessary. However, this approach would have universal applicability and would address a launch scenario with a planned impact point in an area where shipping density is relatively high and surveillance might become necessary in addition to posting a notice to mariners. For someone launching from the ocean, such as Sea Launch, surveillance requirements may decrease. However, the FAA does request public comment on this particular proposal and any available data that might show whether the criteria is indeed adequate to dispense with surveillance in either the flight hazard area or downrange.

As a final observation, the FAA is aware that the National Academy of Sciences addressed ship hazard areas and the requirements governing them in its study Streamlining Safety. *Id.* at 45. The Academy recommended that the federal launch ranges consider changing their threshold for probability of impact to increase the risk to ships and advised that the ranges conduct additional

[3] The practices at the Eastern and Western ranges differ with respect to the application of individual and collective impact probabilities. Because of the higher amount of ship traffic around Cape Canaveral, the Eastern Range conducts an analysis to ensure that it avoids hitting any ship. At the Western Range, where ship traffic is less dense, the Western Range usually ensures that the probability of impact for any individual ship does not exceed 1×10^{-5}. The Western Range has informed the FAA, however, that were it to experience an increase in ship density around Vandenberg Air Force Base, it, too, would have to employ a collective impact probability criteria. As things stand now, however, the Western Range need not and therefore does not currently employ that amount of analysis. Because of the differences in ship traffic densities, the actual level of safety is not significantly different between the two ranges.

studies. *Id.* at 37, 45. In the interest of maintaining the same level of safety as achieved by the federal launch ranges, the FAA is reluctant to follow this recommendation absent some compelling countervailing reason.

The Academy bases its recommendation on an argument for consistency between the ranges. Streamlining Safety at 45. Although the Eastern Range may initiate a launch hold or scrub if the collective risk exceeds 1×10^{-5}, the Academy thought that the inconsistency between this approach and the Western Range's use of individual risk and what it characterized as accepted guidelines for the evacuation of hazard areas called for the use of individual risk. The FAA is not persuaded that this apparent inconsistency provides sufficient grounds for change; more so, because, in actuality, the Western Range employs individual risk because it has less shipping traffic to address. Were ship densities higher, the Western Range would also employ collective risk to ensure that a launch did not place any ship at risk.

4. Flight Safety Analysis for Unguided Suborbital Rockets Flown With a Wind Weighting Safety System

A launch operator would perform flight safety analysis to determine the launch parameters and conditions under which an unguided suborbital rocket could be flown using a wind weighting safety system and without a flight safety system. The results of this analysis would demonstrate whether any adverse effects resulting from flight would be contained within controlled operational areas that are isolated from the public. The analysis would also have to show whether any flight hardware or payload impacts would occur within planned impact areas that are isolated from the public. If such containment and isolation cannot be achieved, the launch operator must conclusively show that any adverse effect resulting from flight will not exceed individual or collective public risk criteria. The launch operator would perform a trajectory analysis, a hazard area analysis, a debris risk analysis, analyses for toxic and distant focus overpressure hazards, and a conjunction on launch assessment similar to those required of a launch vehicle with a flight safety system. The launch operator would also perform a wind weighting analysis to determine launcher azimuth and elevation settings that correct for the windcocking and wind-drift effects on an unguided suborbital rocket due to wind forces.

A launch operator must identify the dispersion around its nominal drag impact location. The launch operator must identify that area by analyzing the performance error parameters associated with the rocket's design and operation. A performance error parameter acts as a source of deviation from nominal performance. It is a quantifiable perturbing force that contributes to the dispersion of the launch vehicle's drag impact point in the uprange, downrange and crossrange directions. Performance error parameters typically include thrust, thrust misalignment, specific impulse, weight, variation in firing times of the stages, fuel flow rates, contributions from the wind weighting safety system employed, and winds.

5. Protected Areas and Flight Control Lines.

For a launch vehicle that uses a flight safety system to ensure public safety, a launch operator would establish flight control lines that border populated and other areas requiring protection. By implementing flight safety limits and flight termination rules, a launch operator would keep debris created by a malfunctioning launch vehicle from impacting any populated or other protected area outside the flight control lines. As part of the analysis to determine flight control lines, a launch operator would identify the boundaries of the areas that must be protected. To account for the uncertainties in knowing exactly where a protected area is on the face of the Earth in relation to the position of a launch vehicle, a launch operator would add map and tracking errors to offset flight control lines from the protected areas. The flight safety limits would account for the errors and dispersions associated with the launch vehicle and flight safety system, which includes the flight termination sequence of events.

The FAA notes that the proposed flight control lines are not unlike the impact limit lines currently employed by the federal launch ranges. The FAA intends the flight control lines as general performance requirements and also notes that employing impact limit lines as implemented by the federal launch ranges would satisfy the FAA's proposed requirements. The FAA proposes to employ the different terminology to clarify what is to be protected. EWR 127–1 defines an impact limit line as a hazardous launch area and the boundary within which trajectory constraints and flight termination systems are used to contain an errant launch vehicle and vehicle debris. EWR 127–1 at 1–vii (Oct. 31, 1997). In practice, an impact limit line is not a ''line in the sand.'' A worst-case map and tracking error could result in an impact beyond an impact limit line without necessarily indicating a failure of the flight safety analysis or the flight safety system as long as there is no impact of a protected area. Thus, an impact limit line does not mark only what must be protected.

One of the proposed criteria for establishing flight control lines dictates that flight control lines must protect any land area not controlled by the launch operator. The FAA's protected areas would not only include towns, cities and other obviously populated areas, but all land areas outside the control of the launch operator because of the relatively high probability that people could be present on any land and the fact that any land may constitute property or contain the property of others. The safety of ships and aircraft would be addressed through the establishment of hazard areas and flight commit criteria as discussed earlier in this notice.

If the overflight of a land area not controlled by the launch operator is necessary as part of normal flight, it may be accomplished by first establishing the flight control lines and then establishing a ''gate'' in the flight control lines in accordance with the risk criteria for overflight of land. A launch vehicle would be allowed to pass through a gate only if the vehicle was performing within normal limits. The land areas within a gate are still considered protected. The flight control lines protect such land areas up until the launch vehicle enters the gate. If the launch vehicle began to malfunction before it reached the gate, the flight safety system would terminate the flight before the launch vehicle reached the flight control line or the gate. FAA requirements would permit the launch vehicle to enter the gate and overfly a land area only if the launch operator obtained positive in-flight verification that the launch vehicle had performed within normal limits up to that point and performance parameters indicated that the launch vehicle would continue to perform normally and the launch vehicle's dwell time was such that it satisfied the risk criteria.

In addition to using the flight safety system, flight control lines, and gates as positive deterministic means to protect people and property, the regulations would also allow application of risk assessment techniques to quantify the risk to people in a proposed land overflight for purposes of determining whether the risk remains within acceptable limits. In effect, a launch operator's debris risk analysis would serve to restrict land overflight on the basis of the size of the population in any land overflown. For example, the FAA expects that no launch in the foreseeable future would be able to meet the E_C criteria of 30×10^{-6} if the planned trajectory involved placing a gate in a flight control line that would result in overflight of a city or other densely populated area.

Flight control lines present other issues as well. The FAA defines the public to include other launch operators located at the same launch site. See Launch Site NPRM, 64 FR at 34334. The FAA's proposed use of a flight safety system and flight control lines would not necessarily provide protection for the property of such launch operators.[4] This is in keeping with the current practice at the federal launch ranges. Currently, at the federal launch ranges, two launch pads may be situated such that if flight control lines were drawn to demarcate and protect the property of others, launch might not take place at all because the flight control lines might intersect the normal flight trajectory. The unintended consequence of such an intersection at a federal range would be the requirement to destroy a perfectly good launch vehicle.

The basis of the FAA's proposed approach to ensuring the safety of another launch operator's property at the launch site is that, unlike the general public outside the launch site, another launch operator is in a significantly better position to be informed of launch activities and to participate in decisions on the best way to protect its property. The safety of another launch operator's property would be addressed through efforts coordinated by the launch site operator. Launch Site NPRM, 64 FR at 34337, 34364 (proposed section 420.55 and accompanying discussion). In this case, the FAA would not mandate how the safety of property is achieved, but would require that the coordination take place. As part of coordination with a launch site operator, a licensed launch operator would be required to provide any information on its activities and its potential hazards necessary to determine how to best protect another launch operator's property. For example, through coordinated scheduling, another launch operator may simply elect to ensure that its launch vehicle is not present when another launch is scheduled.

The FAA's flight control line requirements are not intended to preclude private arrangements that would result in more narrowly drawn flight control lines. After all, a launch site operator would have responsibility for coordination of its customers. For launch sites located outside of a federal launch range, where a launch site operator has the opportunity to select optimum launch point locations, the site operator could site each launch point so that it would be protected by flight control lines. Such a site operator would also be free to designate contractually that certain areas or property at a launch site or downrange be protected by flight control lines. The federal launch ranges do this today, describing impact limit lines around downrange assets such as transmitters whose loss would disrupt not just one but many launches. By not requiring flight control lines to protect the property of others at a launch site the FAA does not mean to imply that a launch operator might not face liability for any damage it caused to the property of others. Accordingly, the FAA recognizes that a launch site operator, in fulfilling its obligations under proposed section 420.55, and a launch operator, in the interests of avoiding damage to the property of others, may wish to establish flight control lines more stringent than those required by the FAA's proposed regulations.

A launch site operator's ability to require a launch operator to establish flight control lines by contract may create some confusion as to what is mandatory under the regulations. Regardless of whether a flight control line imposed by a launch site operator is more stringent than FAA requirements or not, that flight control line would still be mandatory under FAA regulation. Although flight control lines drawn within a launch site are not themselves required by FAA regulations, they are mandatory once included within the launch operator's flight safety plan. Because a flight safety plan is approved as part of the licensing process, it is mandatory upon a licensee. *See* 14 CFR 415.73(a).

6. Distant Focus Overpressure Blast Effects Risk Analysis

A launch operator would be required to conduct an analysis to demonstrate that the potential hazard resulting from impacting explosive debris, including impact of an intact launch vehicle, would not cause public exposure to distant focus overpressure blast effects, sufficient to break windows and cause injuries. Impacting explosive materials, both liquid and solid, have the potential to explode. Given the appropriate combination of atmospheric pressure and temperature gradients, the impact explosion can produce distant focus overpressure at significant distance from the original blast point. Overpressures ranging from as low as 0.1 psi and greater may cause windows to break; but, depending on the size and thickness of windows and number of panes in each window in the locality of the launch site, other forms of overpressure such as multiple pulses may prove hazardous as well. Also, different levels of overpressure can occur at different distances depending on atmospherics and the explosive yield. A launch operator would have to address whichever levels and forms of overpressure created a hazard for the windows in the locale.

The distant focus overpressure explosion hazard primarily arises out of the impact of un-ignited solid propellant motors or failures of segmented motors so that portions of the motor impact intact,[5] and, when the weather conditions for inversion and lapse layers are right, the overpressure can focus in distant locations. A weather condition, referred to as an inversion, where sonic velocity increases with altitude, reflects the shock wave back toward the surface, where it can produce an increased overpressure at distances far from the source of the blast. The largest overpressure increase is produced from a caustic condition where the sonic velocity first decreases from its surface value and then increases beyond its surface value with increasing altitude.

The federal launch ranges typically assess the hazards of potential distant focus overpressure on a programmatic basis to determine if any population may be at risk for a given combination of launch vehicle and launch point. Based on this analysis a federal range may or may not perform an analysis for each launch. The FAA considered the option of not requiring this analysis. The FAA is aware of only a few launches involving the largest launch vehicles being delayed due to concerns regarding distant focus overpressure. This raised the question of whether sufficient grounds for concern exist to export this requirement to non-federal launch sites. However, because breaking windows or glass may cause injury to the public and the purpose of this rulemaking is to address all potential expendable launch vehicles, from all launch sites, the FAA proposes to retain this requirement. A launch operator would employ either a deterministic or

[4] The proposed regulations would provide for the safety of another launch operator's personnel through the establishment and evacuation of hazard areas for each launch.

[5] Liquid propellant impact explosions are rare because destruction of a launch vehicle through a flight termination action usually causes the liquid propellant to disperse prior to impact.

probabilistic analysis approach. For the deterministic approach, the launch operator would use the methodologies contained in the American National Standard Institute's ANSI S2.20–1983, ''Estimating Air Blast Characteristics for Single Point Explosions in Air with a Guide to Evaluation of Atmospheric Propagation and Effects'' to identify any populations that may be at risk and to establish flight commit criteria and other hazard mitigation measures. When using a probabilistic approach the launch operator would demonstrate through a distant focus overpressure risk analysis that the launch will be conducted in accordance with the proposed public risk criteria. The FAA proposes to evaluate any distant focus overpressure risk analysis on a case-by-case basis.

7. Dependent Analyses

Many of the proposed analyses are inherently dependent on one another. A launch operator would be required to ensure that each analysis product or data output is compatible in form and content with the data input requirements of any dependent analysis. A chart is provided in order to assist launch operators in determining which analyses depend on other analyses. The left column of figure 1 lists each analysis that is a source of data to be used as input by another analysis. The remaining columns in figure 1 identify the analyses that are dependent on the data from each data source analysis. The dependencies identified in figure 1 may vary depending on the methods that a launch operator chooses to implement to meet the proposed requirements for each analysis. A launch operator would have to understand the dependencies that its analyses have on one another in order to ensure that the overall analysis results accurately reflect the proposed launch and provide for public safety. The following paragraphs provide some examples of these dependencies that are of particular interest.

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Data Source Analyses (These analyses provide data to the dependent analyses indicated.)	Dependent Analyses (These analyses use data from the data source analyses indicated.)											
	Trajectory Analysis (§417.205)	Malfunction Turn (§417.207)	Flight Safety Limits (§417.213)	Straight Up Time (§417.215)	No-Longer Terminate Gate (§417.219)	Data Loss Flight Time (§417.221)	Flight Hazard Areas (§417.225)	Debris Risk Analysis (§417.227)	Toxic Release Risk (§417.229)	Distant Focus Overpressure Blast (§417.231)	Conjunction on Launch Assessment (§417.233)	Sub-Orbital Rocket Analysis (§417.235)
Trajectory Analysis (§417.205)		X	X	X	X	X	X	X	X	X	X	
Malfunction Turn Analysis (§417.207)			X	X		X	X	X	X	X		
Debris Analysis (§417.209)			X	X	X	X	X	X	X	X	X	
Flight Control Lines (§417.211)			X	X	X	X	X	X	X	X		
Flight Safety Limits (§417.213)					X	X		X	X	X		
Straight-Up Time (§417.215)									X	X		
Wind Analysis (§417.217)	X		X	X	X	X	X	X	X	X		X
No-Longer Terminate Gate (§417.219)						X		X	X	X		
Time-Delay Analysis (§417.223)		X	X	X	X	X	X	X	X	X	X	
Flight Hazard Areas (§417.225)								X				
Sub-Orbital Rocket Analysis (§417.235)								X	X	X	X	

Figure 1

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All of the analyses depend on some form of trajectory analysis. Before a launch operator can analyze malfunction turns, establish flight safety limits or hazard areas, or perform various risk analyses, the launch operator must have a clear understanding of what the launch vehicle's trajectory would be under normal conditions when the vehicle performed as intended. For example, a launch operator would employ a point along the nominal trajectory as a starting point for a malfunction turn. As another example, in order to establish flight control lines and any gates in a flight control line that define the region over which a launch vehicle would be allowed to fly, a launch operator would have to know the limits of normal launch vehicle flight. The other proposed analyses have a similar dependence on the results of the trajectory analysis. An error made when performing the trajectory analysis or in translating the output of the trajectory analysis into input for the other analyses, can have a ripple effect, resulting in invalid analysis results with a potential negative effect on public safety.

Before a launch operator can establish flight safety limits or hazard areas to protect people and property from flight hazards, the launch operator must have a clear understanding of those hazards, which is the primary purpose of the debris analysis. A launch operator would conduct a debris analysis to identify inert, explosive and other hazardous launch vehicle debris resulting from a launch vehicle malfunction and from any planned jettison of launch vehicle components. A debris analysis would list and categorize the debris that would result from planned events and the potential activation of a flight termination system or spontaneous breakup due to a launch vehicle failure. Each debris piece would be categorized according to its physical properties and other characteristics, such as whether it is inert or explosive and the effects of impact, such as explosive overpressure radius, skip, splatter, or bounce. A launch operator 's flight safety limits analysis and hazard area analyses would use the debris characteristics established by the debris analysis to determine the debris impact dispersion, which shows where the debris might travel as it falls through the atmosphere and as it is affected by conditions such as wind and changing air density. The products of the debris analysis would also be used to determine where planned stage impacts would occur and, in the event of a malfunction, to ensure activation of the flight safety system in sufficient time to keep the impacting debris from impacting outside the flight control lines. The hazard area analysis would use debris data to identify the land, sea, and air regions that would have to be publicized, monitored, controlled, or evacuated in order to protect the public from potential impacting debris and comply with the public risk criteria.

As a final example, the debris analysis products would be employed in a debris risk analysis to determine the expected average number of casualties (E_C) to the collective members of the public exposed to inert and explosive debris hazards from any one launch. The calculation of E_C is dependent on the effective casualty area of the debris. A debris risk analysis would determine the effective debris casualty area as a function of, among other factors, launch vehicle flight time, whether the debris is from a launch vehicle breakup or a planned spent stage or jettisoned component impact, and whether the debris is inert or explosive on impact or dissipates through burning during its fall. A launch operator's debris analysis would also determine the effective casualty area for debris resulting from both payload and vehicle systems and subsystems.

8. Casualty Due to Debris

A launch operator should be aware that a debris analysis raises issues that have been the subject of debate for some time with respect to the definition of casualty. By this notice, the FAA proposes to employ its definition of serious injury as part of its definition of casualty. The FAA defines serious injury to mean any injury which requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; results in a fracture of any bone (except simple fractures of fingers, toes, or nose); causes severe hemorrhages, nerve, muscle, or tendon damage; involves any internal organ; or involves second- or third-degree burns, or any burns affecting more than five percent of the body surface. *See* 14 CFR 401.5 (referencing ''serious injury'' within definition of ''launch accident'').

The proposed debris analysis requirements would require a launch operator to identify each piece of debris. In determining the debris hazard area that constitutes part of a flight hazard area and in defining ship-hit contours, the proposed regulations would require a launch operator to account for debris pieces with a ballistic coefficient of three or greater. The FAA realizes that, depending on circumstances, the impact of a person by a debris piece with a ballistic coefficient of less than three might cause a casualty and conversely, a debris piece with a higher ballistic coefficient might not cause a casualty. However, based on a review of the approaches used at the federal launch ranges, the FAA believes that using a ballistic coefficient of three when determining hazard areas and performing debris risk analyses provides for an appropriate level of safety.

The Western Range has historically analyzed all debris, regardless of how small the debris may be. The Eastern Range uses a ballistic coefficient of three as the measure of concern. The FAA proposed a ballistic coefficient of three in its Launch Site NPRM. A ballistic coefficient of three correlates approximately to a hazardous debris piece possessing 58 foot-pounds of kinetic energy, the Air Force explosive safety standard for debris that would produce a casualty. ''Casualty Areas from Impacting Inert Debris for People in the Open,'' RTI/5180/60–31F Montgomery and Ward, 2.2 (Apr. 13, 1995). This report recognizes the difficulties in establishing a suitable threshold expressed in terms of kinetic energy. *Id.* (citing ''Estimation of Casualty from Impacting Debris,'' ACTA, Inc., Technical Rep. No. 39–217/15–01, prepared for the U.S. Department of the Air Force (Sept. 29, 1989)). Those difficulties may be illustrated through example. For instance, a tackled football player who experiences an energetic impact of 400 to 500 foot-pounds usually is not injured. On the other hand, someone who stops a 38-caliber bullet having a kinetic energy of only 120 foot-pounds may well be killed. Other difficulties in employing kinetic energy as an indicator of a hazard are apparent as well. A piece of launch vehicle debris with an area of one square foot and a tumbling ballistic coefficient of two can have a vertical velocity component at impact of about 21feet per second and a kinetic energy of about eight foot-pounds. Although a broad side impact from the debris piece might leave a person unharmed, a slashing end-on impact might result in a serious wound.

Accordingly, although the Air Force uses 58 foot-pounds as a safety standard for a hazardous debris fragment , the FAA does not consider 58 foot-pounds a sufficiently adequate measure of what might produce a casualty. ACTA points out that this impact energy could be obtained with a full 12-ounce beverage can dropped from seven stories up, and that it could kill someone at street level. ''Estimation of Casualty'' at 1–10. Nor does reliance on kinetic energy account for the surface area over which the impact may occur, or the duration of the impact, both of which are significant.

As a result, as the FAA proposed in the Launch Site NPRM, the FAA proposes to rely on a ballistic coefficient of three. See Launch Site NPRM, 64 FR at 34347 (relying on ballistic coefficient of three ''because it is the most wind sensitive debris piece with a potential for harm of reasonable significance.'').

9. Collective Risk

As in previous rulemakings, this rulemaking raised a number of issues regarding risk. The FAA has had to address whether or not to limit risk based on an aggregation of the risks associated with each common launch hazard, whether to set a risk limit for each hazard separately and questions regarding the contribution of a flight termination system failure to risk in the launch area. The FAA proposes to limit acceptable risk to an aggregation of all hazards. On the basis of practices at the federal launch ranges, the FAA proposes to require consideration of the possibility of a flight termination system failure as a contributor to the risk of debris.

a. *Aggregation of hazards to measure risk.* In 1999, the FAA adopted a risk standard for debris which permitted launch only if flight of the launch vehicle did not exceed an expected average number of 0.00003 casualties (E_C) per launch ($E_C \leq 30\times10^{-6}$). 14 CFR 415.35(a). In this notice the FAA proposes to set a collective risk standard that accounts for all hazards, not just for debris, including such common hazards as those associated with toxic releases and blast overpressure. As permitted by 127–1, different federal launch ranges have different practices. EWR 127–1 establishes launch risk guidance on ''a collective risk level of not more than 30 casualties in 1 million (30×10^{-6}) for the general public.'' EWR 127–1, 1–12, 1.4d (Oct. 31, 1997). The Air Force has not made a final decision on what that measure reflects. *See id.* at 1–41, Appendix 1D, 1D.1b (''The overall risk levels *may or may not* be an additive value that includes risks resulting from debris, toxic and blast overpressure exposures.'' (Emphasis added.)) In practice, this has resulted in differing approaches at the Eastern and Western Ranges.

Historically, the 30th Space Wing, which oversees safety at the Western Range at VAFB, has reviewed an aggregated E_C for all hazards of each launch when the measures of risk for each hazard are available.[6] The Western Range has found that one hazard usually predominates as the source of risk. The conditions that are conducive to driving up the risk of one hazard usually render another hazard less significant. Also, as a general rule, most launch vehicles do not generate multiple risks. Accordingly, on the basis of available risk measures, at the Western Range, the risks created by the combination of debris, toxic releases and blast overpressure do not tend to exceed $E_C \leq 30\times10^{-6}$.

The same may or may not be true at the Eastern Range. The 45th Space Wing, which conducts launch safety for the Eastern Range, came more recently to the use and quantification of risk. Weather conditions and launch azimuths did not require the refinements of risk analysis to determine when conditions were satisfactory for launch. The Eastern Range used deterministic methods predicated on worst case conditions, assuming for toxic hazards that the undesired event would occur. Unlike the Western Range, the Eastern Range does not aggregate the risk numbers associated with each hazard for each launch. Instead, it caps two hazards, debris and overpressure, at $E_C \leq 30\times10^{-6}$, and possibly toxic hazards as well. Were the Eastern Range to limit an aggregate of the identified hazards, rather than each one, the Eastern Range believes that launch availability would be curtailed below present launch rates. Accordingly, for commercial and government launches, the Eastern Range uses an $E_C \leq 30\times10^{-6}$, for debris, an $E_C \leq 30\times10^{-6}$ for blast overpressure and $E_C \leq 233\times10^{-6}$ for toxic releases, where the Eastern Ranges defines the public as non-mission essential personnel located at the Cape and the general public outside of the Cape. The E_C for toxic releases reflects the fact that the Eastern Range operates within the Range Commander's discretionary zone for accepting risk. The FAA foresees the possibility that capping risk at an $E_C \leq 30\times10^{-6}$, for all hazards, may have an impact on launch availability and scheduling and invites comment from the launch operators regarding any data they may have regarding the possible effects.

[6] As the FAA is proposing, the federal launch ranges assess risks to determine the acceptability of those risks when containment or exclusion measures do not otherwise provide an adequate approach. Exclusion has proved practical and therefore, often, preferable. Where the ranges employ exclusion, they often do not measure the risk because risk remains far below the threshold levels. For example, if there is no inversion layer on the day of launch, there is no need to perform a risk analysis.

The accuracy of the Eastern Range's measure of expected casualty is the subject of debate in light of the mitigation response available. In accordance with guidance from Space Command's Surgeon General, the Eastern Range approached local Brevard County authorities, described its risk management policy to the county and recommended a hazard level and management approach. The county agreed to the approach. The Eastern Range informed the county of its nominal public safety criteria of 30×10^{-6} for each hazard, but that the recommended concentrations and risk level represented a collective risk level of 233×10^{-6}. The county agreed with the recommendation. The Eastern Range and the county reached agreement on what predicted concentration of parts per million for various substances would result in a launch delay. The Eastern Range has not developed any methodology by which the effectiveness of Brevard County's emergency response can be accounted for in its risk estimation model, LATRA.

The county and the Eastern Range improved their notification capability after a January 1997 Delta abort, which took place prior to county personnel being present on base for all launches. Notification to the Brevard County Emergency Management Coordinator about the actual abort hazards from the August 1998 Titan abort took only minutes, as opposed to hours for 1997 Delta abort. Additionally, since that time the county has activated its automated reverse 911 capability for calling thousands of residences per hour for emergency notifications. While this capability has not been exercised to date for hazards arising out of a launch, it certainly promises mitigation benefits. Also, arrangements between Brevard County emergency management personnel and National Weather Service (NWS) Melbourne weather personnel have been made to transmit emergency management announcements of toxic cloud information. The announcements are made over the NOAA Weather Alert Radio System, which is constantly monitored on thousands of radios throughout the county, particularly at all schools and other county facilities. These emergency response capabilities and their effectiveness in reducing overall risk of exposure have not been evaluated.

Maintaining all risks below an acceptable level provides the best course. The FAA seeks to avoid a person being injured by any cause. This constitutes current practice for the 30th Space Wing and may well prove to constitute current practice for the 45th

Space Wing. The 45th may continue to abide by its understanding with Brevard County and alert the county at the concentration levels agreed to for government launches. The FAA anticipates that part of achieving a common approach to aggregations would require a launch operator to input identical failure response modes and associated probabilities for each hazard. If, for a commercial launch, risk exceeds 30×10^{-6} when calculated under a standardized approach, launch may not take place. The FAA seeks public comment on the potential impacts of this proposal.

b. *Contribution to collective risk due to the possibility of flight termination system failure.* The FAA proposes to require a launch operator to address the possibility of a flight termination system failure in the course of the launch operator conducting its risk analysis. Although it may appear that flight termination system contribution is not addressed for most operational systems launching from federal ranges today, the ranges do, in fact, review whether flight termination system failure may constitute a significant contribution to risk. The ranges make this assessment early in the process of assessing a new launch vehicle system, and the Eastern Range, for each launch, assesses failure modes where a potential flight termination system failure could result in significant contribution to collective risk. Because of the robust flight termination system test program, redundancy and the degree of oversight the ranges' flight safety system analysts exercise, those responsible for assessing risk count on the reliability of the flight termination system employed for each launch. Although in many instances initial analysis may demonstrate that the contribution of flight termination system failure to expected casualty is insignificant, a credible scenario may exist where the contribution would be significant. Accordingly, based on the ranges' experience and the reasons addressed in the following discussion, the FAA proposes to ensure through this rulemaking that all commercial launch operators employing a flight termination system account for the contribution to risk of possible flight termination system failure.

As a general rule, where a flight termination system plays a role in mitigating a hazard, the likelihood of a failure of a flight termination system may contribute to the final outcome of an E_C analysis and the ranges assess that contribution to determine its significance. Where a flight termination system does not serve to mitigate the potential risk, its contribution is not assessed. With the exceptions of failure scenarios addressing toxic and distant focus overpressure hazards, this typically means that for failure scenarios in which the launch vehicle's instantaneous impact point remains within the range destruct lines, possible flight termination system failure does not contribute in a significant way to risk totals. This is because under those circumstances the consequences of such a failure remain extremely low. A flight termination system may fail while the launch vehicle performs successfully, or the launch vehicle and the flight termination system could both fail, but if the launch vehicle's instantaneous impact point stays within the destruct lines, the consequences are typically negligible.

For potential launch vehicle break up that occurs when the vehicle's instantaneous impact point has moved outside the range destruct line, the ranges consider flight termination system reliability a factor in debris, toxic and distant focus overpressure E_C calculations because a flight termination system can prevent a launch vehicle from crossing destruct lines. The Western Range generally does not calculate the E_C for vehicle instantaneous impact point outside the destruct lines for each launch. At the Eastern Range, the 45th Space Wing does account for the possibility of a launch vehicle's instantaneous impact point crossing destruct lines, in what it characterizes as a ''mode 5'' failure analysis, due to the presence of populations in the vicinity including launch viewing areas open to the public.

There are also scenarios where the vehicle's instantaneous impact point remains within the destruct lines and where potential flight termination system failure would contribute to collective risk. For example, an on course failure endangering the continued operation of the flight termination system itself, by, for example, tumbling, could contribute to risk, although the ranges do not consider it significant because of the flight termination system design and test requirements that ensure a flight termination system will survive launch vehicle failure environments to the point that the launch vehicle will break up. As another example, if a flight termination system failed to disperse toxic materials at altitude or prevent intact impact of propellant and resulting explosions, the flight termination system probability of failure might contribute to risk.

Toxic release and distant focus overpressure risks are both functions of the probability of vehicle breakup at a location near the launch site and their hazardous effects upon the public are not necessarily dependent on destruct line violation. Therefore, destruct line violation is not considered as a factor in calculating toxic release and distant focus overpressure risks.[7]

F. Flight Safety System

1. Introduction

This proposed rulemaking contains requirements governing a flight safety system. The FAA proposes to define a flight safety system as a system that provides a means of preventing a launch vehicle and its hazards, including any payload hazards, from reaching any populated or other protected area in the event of a launch vehicle failure. A flight safety system, unless otherwise approved in the course of the licensing process, consists of an onboard vehicle flight termination system, a command control system, and support systems on the ground, including tracking, telemetry, display, and communications, and includes all associated hardware and software. A flight safety system also includes the functions of any personnel who operate flight safety system hardware and software.

This proposed rulemaking reflects much that is current practice at the federal launch ranges today. As with the other proposed requirements, the FAA in this proposed rulemaking intends to regulate flight safety systems as necessary to protect the public health and safety and the safety of property against significant risks and to achieve a high level of safety. A flight safety system protects against the significant risks created by launch of a launch vehicle. The requirements of the federal launch ranges, including their design, testing and installation requirements, are all part of an approach that has resulted in members of the public experiencing no physical harm. The FAA seeks to maintain the same high level of safety that the federal ranges have achieved. At the same time, the

[7] At the Eastern Range, only debris is considered for possible E_C contribution outside of a destruct line. Failure of a flight termination system could allow an intact vehicle to impact off site with enough remaining toxic or perhaps explosive material to cause a toxic release or explosion at the distant site. To employ the ranges' computer models for a risk analysis under this situation would require establishing a source location at the distant impact site and assessing the local population, number of windows, local wind field, etc. This is not practical given a large number of possible, random distant impact sites. Because a flight termination system failure with ensuing uncontrolled flight and impact would be hazardous enough in itself, the Eastern Range treats attempting to calculate additional secondary effects of toxics and overpressure as superfluous.

FAA recognizes that more than one method exists by which to protect the public and to achieve the requisite levels of safety.

The proposed rulemaking proposes performance requirements for any flight safety system a licensed launch operator will employ, whether that flight safety system is the more familiar command destruct system, or an autonomous system, including Sea Launch's Russian and Ukrainian thrust termination system. As one of the more general performance goals, a flight safety system must keep the hazards associated with a launch vehicle and its payload from reaching populated and other protected areas. A launch operator seeking a license must demonstrate convincingly its ability to satisfy this requirement. If a launch operator plans to employ the flight termination system upon which most licensees rely today, this proposed rulemaking provides the performance, design, test and installation requirements with which that licensee must comply. If a launch operator proposes an atypical flight safety system, the launch operator must provide a clear and convincing demonstration that it will achieve an equivalent level of safety to that obtained through adherence to the requirements.

Although this proposed rulemaking would codify much of what the federal launch ranges require, some changes will be evident. Some of these changes arise out of the differences between regulatory requirements and the fact that the federal launch ranges may speak in terms of goals and the FAA must determine whether to require that goal or not. Other differences will evolve out of the existence of waivers issued by the federal launch ranges. A review of some of the background behind various flight safety systems is useful at the outset.

2. History and Background

Launch vehicles launching from the United States typically use a flight safety system, referred to at the federal launch ranges as a flight termination system or FTS, that is used to destroy the launch vehicle whenever the launch vehicle strays outside of a predefined flight envelope. Federal launch ranges typically require an FTS on guided launch vehicles that have the capability to violate established safety criteria under powered flight, in order to protect the public and range personnel. The reliability of the flight safety system plays more of a role than the reliability of the launch vehicle in achieving safety.

U.S. design standards normally require a redundant command flight termination system on every powered stage capable of reaching the public unless a particular stage possesses an autonomous destruct system such as an inadvertent separation destruct system (ISDS). The commonly employed inadvertent separation destruct system is usually implemented for solid rocket motors. Some rocket stages, primarily solid rocket boosters, may be capable of continued flight after becoming separated from the main launch vehicle if their propellant is not exhausted and continues to burn or even, as happens at times, begins to burn and produce thrust. An ISDS is required to ensure that a thrusting motor, freed by a vehicle breakup, will be destroyed. An ISDS uses lanyards, break wires, or other devices to detect the conditions in which it will initiate a destruct action. An ISDS is typically employed on stages that have the potential to become separated from the command flight termination system during the break up of a launch vehicle.

An autonomous system such as Sea Launch's Zenit-3SL's thrust termination system uses multiple computers to evaluate vehicle status as well as vehicle performance to determine if a flight termination command is required. The U.S. standards require a flight termination system to destroy a vehicle, not just terminate the motor thrust as is accomplished by a thrust termination system. An U.S. flight termination system is designed to terminate the thrust of the vehicle and to disperse the propellants with minimal explosive effect. Russian and Ukrainian space launch programs traditionally use an autonomous thrust termination system for liquid fueled vehicles. Such a system relies on the autonomous detection of trajectory or vehicle anomalies, the detection of which results in an autonomous shutdown of the liquid rocket engines. Termination of thrust allows an errant rocket to fall ballistically back to Earth. This approach tends to confine the damaged region on the earth more than mid-air destruction of the launch vehicle; however, the resulting intensity of the destruction may be more pronounced if a thrust termination system shuts down and leaves propellants in a vehicle's tanks, and the tanks survive until impact.

Although the federal launch ranges typically require a command flight termination system on the final powered stage capable of reaching the public, some U.S. launch vehicles, including the Scout and Pegasus, have previously been approved, through federal launch range waiver processes, for launch without a flight termination system on the final stage. Each vehicle provides a command hold fire capability on the final stage ignition, which means that if the launch vehicle is not on its intended trajectory that the flight safety official can transmit a command for the stage not to ignite. Range approval of these two vehicles resulted from a failure modes and effects analysis that identified all potential failure modes that could result in land impact, and an expected casualty analysis that satisfied the ranges' risk criteria, assuming these failures.

An examination of U.S. launch history shows that flight termination systems have been very dependable. Since the late 1950's there have been about ten flight termination system failures in approximately 3150 launches, resulting in a demonstrated flight termination system reliability of 0.996 at 95% confidence. The ten failures include both ground system and failures of the system located on the launch vehicle. In most of these failures, the flight termination system was not required to initiate a destruct action, but the flight termination system was declared ''failed'' because it would not have worked if it had been required at some point in its flight. This demonstrated reliability compares favorably to the federal launch range goal of 0.998 reliability at 95% confidence for the complete ground and airborne system. 45th Space Wing/ Eastern Range Range Safety Operations Requirement Command Destruct System, 7.7.1.2.8 (Apr. 2, 1998); Range Commanders Council Document 319–92, ''Flight Termination System Commonality Standards'' 2.4.1 (Aug. 1992). In the 1960's, three flight termination system in-flight component failures occurred; two were ordnance-train failures and one was an electronic system single-channel failure.

There have been a few isolated instances of anomalies associated with human-commanded flight termination systems. In February 1993, a Pegasus launch of Brasilsat was successful but was marred by poor integration and poor communication between the operators and the personnel responsible for range safety.[8] Although there were no flight termination system component failures, an abort was called because of the dropout of one frame (40 milliseconds) of telemetry data from one of the flight termination system

[8] ''Special Investigation Report, Commercial Space Launch Incident, Launch Procedure Anomaly, Orbital Sciences Corporation Pegasus/ SCD–1 80 Nautical Miles East of Cape Canaveral, Florida,'' NTSB (Feb. 9, 1993).

command receivers. The federal launch range required the vehicle's flight termination system to be fully functional for launch to occur. Due to lack of proper operational preparation and operational coordination between the range safety personnel and the operational controllers, the range safety call for abort was not acknowledged, and the launch proceeded. Despite this incident, the launch vehicle flew nominally and successfully orbited its payload.

In October 1995, a Conestoga launch from Wallops Flight Facility experienced a flight termination system anomaly. Although the vehicle broke up due to aerodynamic forces caused by a malfunction that induced a yaw, an attempt was made to issue a destruct command. The failure occurred at the exact time the command routing was being switched from one ground station to another, and it is questionable whether the command was actually sent. Frequency monitoring determined that the signal was not transmitted. The vehicle's seven solid rocket boosters should have been split down the side by their ISDS to destroy their flight capability. However, at least two of the boosters continued to fly unguided. Although no harm occurred, the flight termination system did not operate as designed.

3. Flight Safety System Reliability

Federal launch range standards require a flight termination system to be designed to function in environments that exceed normal environments expected during flight in order to ensure launch vehicle destruction following a failure. U.S. flight safety system components are required to be independent of vehicle systems and withstand a harsher environment than other launch vehicle components. The federal launch ranges have a reliability goal of a minimum of 0.999 at the 95% confidence level for the flight termination system onboard a launch vehicle. EWR 127–1 at 4.7.3.1(a). RCC Flight Termination System Commonality Standards at 2.4.1. A 0.999 reliability at a 95% confidence level can only be demonstrated through a large number of launches or tests of the complete system while exposed to flight environments. Because it is not practical to test systems in the numbers necessary to demonstrate this confidence level, the federal launch ranges employ robust testing of the individual flight termination system components and testing of the integrated system that is designed to identify problems that could lead to system failure. This test program incorporates the lessons learned over the many years of federal launch range operations and represents the industry's best practice for ensuring the reliability of such a system. Additionally, the command control system that transmits any flight safety commands to the onboard vehicle system also has a reliability goal of 0.999 at 95% confidence. This results in an overall federal range flight safety system reliability goal of 0.998 at 95% confidence. The federal ranges have been very successful in implementing their reliability goal as a goal rather than as a requirement. However, such a goal does not directly translate into a regulatory requirement. The FAA's proposed regulations would require each flight termination system and command control system to have a reliability design of 0.999 at a confidence level of 95 percent to be demonstrated through an analysis of the design. The FAA is not proposing that this reliability be demonstrated through testing because it is not practical to require the thousands of system level tests necessary to demonstrate compliance with the confidence level. Instead, the FAA is proposing an approach that has been developed in close coordination with the federal launch ranges that incorporates performance oriented design requirements for components coupled with comprehensive qualification and acceptance testing of components and preflight confidence tests of the entire system to ensure the system's reliability.

4. Flight Termination System Testing

The proposed regulations contain requirements for qualification and acceptance testing of flight termination system components based on the approach used at the federal launch ranges. At federal launch ranges, flight termination system components are tested according to federal range-approved test procedures and requirements. Verification methods include test, analysis, and inspection. As an alternative to testing, components of an FTS are sometimes qualified by similarity. A component that has been qualified through testing for one launch vehicle may be approved for use on a different launch vehicle if it can be shown that the environments in which it must operate on the second vehicle are no harsher than those of the first. Also, with limited additional testing, the component may be qualified for a more severe environment.

The flight safety system component manufacturers or vendors at their facilities typically perform qualification and acceptance tests. Qualification tests are performed to verify the design of a flight safety system component and to demonstrate that it will operate reliably at design margins that are greater than the environments to which the component will be exposed. In general, the test program requires qualification testing at levels twice the maximum predicted environment to which the flight termination system would be exposed during storage, transportation, handling, and flight. Functional and electrical tests are performed before and after each environmental test. Typical U.S. qualification test levels and tests include sinusoidal vibration, random vibration, acoustic, shock, thermal cycling, thermal vacuum, and functional tests. Units that undergo qualification testing are not used in flight. Each unit a vendor produces for actual flight undergoes acceptance testing. Acceptance tests provide quality-control assurance against workmanship or material deficiencies and demonstrate the acceptability of each item before flight. Acceptance testing is typically performed on all flight units at levels equal to the maximum predicted environment. Typical acceptance tests include acoustic, acceleration, thermal cycling, and random vibration. Electrical components to be used for flight typically are acceptance tested while single use components such as ordnance and some types of batteries are accepted for flight by performing destructive tests on a number of sample components taken from the same production lot as the component that will be flown.

Preflight confidence tests are conducted at the launch site in the form of bench tests of components and system level tests once the components are installed on the launch vehicle. For example, preflight bench tests are performed on a flight termination system receiver decoder after it arrives at the launch site. These tests are conducted to ensure the receiver decoder is compatible with range ground equipment and operational characteristics have not changed since they were acceptance tested by the vendor. These preflight tests are conducted before and after installation of the flight termination system in the launch vehicle, and before final approval for launch is given. Preflight system testing demonstrates the integrity of the entire system, including transmitters, antennas, receiver decoders, flight power supplies, vehicle engine shutdown valves, and vehicle flight termination system circuitry.

5. Tailoring

The federal launch ranges may ''tailor'' their flight termination system design and test requirements to fit a specific launch vehicle application. The tailoring is intended to ensure that only applicable or alternative range user requested equivalent requirements are levied upon the program and that range safety requirements are levied in the most efficient manner possible. Meets Intent Certification, a form of range tailoring, may be used when a launch operator does not meet the letter of the EWR 127–1 requirements but meets the intent of the requirements. The FAA proposes that a type of tailoring take place during the licensing process. The proposed regulations would allow a launch operator to meet the intent of a requirement through alternative means that provide an equivalent level of safety. Once approved during the licensing process, use of an alternative would be part of the terms of the license. Once licensed, if a launch operator wished to implement a new alternative, it would do so by applying for a license modification.

6. Deviations and Waivers

A federal launch range may grant deviations and waivers when a launch operator does not meet EWR 127–1 requirements. EWR 127–1 permits deviations and waivers when the mission objectives of the range user cannot otherwise be achieved. Deviations are used when a flight termination system design noncompliance is known to exist prior to hardware production or an operational noncompliance is known to exist prior to beginning operations at a federal launch range. Waivers are used when, through an error in the manufacturing process or for other reasons, a hardware noncompliance is discovered after hardware production, or an operational noncompliance is discovered after operations have begun at the ranges. Unlike Meets Intent Certification, the latest EWR 127–1 contemplates acceptance of greater risk for both deviations and waivers. Under the federal launch range process, a launch operator may obtain a deviation or a waiver to meet mission requirements. By implication, this involves an acceptance of greater risk. A launch operator under the proposed regulations would have to demonstrate an equivalent level of safety if it wanted to avoid a published requirement. This is in keeping with the FAA's current practice for licensed commercial launch, but may mark a change from current practice for some who are accustomed to conducting government launches.

7. Alternate Flight Safety Systems

A flight safety system would be required to satisfy all the functional, design, and test requirements of proposed subpart D of part 417 unless the FAA approved otherwise through the licensing process. The FAA would approve the use of a flight safety system that did not satisfy all of proposed subpart D if a launch operator demonstrated that the proposed launch achieved a level of safety equivalent to satisfying all the requirements of proposed subpart B and proposed subpart D. In such cases, a launch operator would have to demonstrate that the launch presented significantly less risk than would otherwise be required, both in terms of E_C and any other significant factors underlying a risk determination. The reduced level of public risk would have to correspond to the reduced capabilities of the proposed flight safety system. To achieve the reduced level of public risk, the launch would typically have to take place from a remote launch site with an absence of population and any overflight of a populated area taking place only in the latter stages of flight. The proposed alternate flight safety system would have to perform its intended functions, however they might differ from the requirements of subpart D, with a reliability comparable to that required by subpart D.

To date, one launch operator has demonstrated this equivalent level of safety to the FAA for an alternate flight safety system. Sea Launch Limited Partnership, which the FAA has licensed to launch from the Pacific Ocean, satisfied the required conditions. The FAA concluded that Sea Launch proposed to employ a flight safety system that, although substantially different from its American counterparts in function, was of comparable reliability. Sea Launch's first launch, for example, presented less risk than otherwise required of a typical launch because of a conservatively calculated E_C of noticeably less than 30×10^{-6}, a launch location barren of population and overflight that took place only in the latter stages of flight.

The design and testing of the Sea Launch thrust termination system were not conducted in accordance with subpart D due to the development of the thrust termination system under foreign auspices. Although many similarities between the two systems in design, redundancy requirements and testing were evident, there were pronounced differences as well.

Sea Launch's flight safety system functions differently than one that satisfies the requirements of subpart D. Unlike an American command destruct system, Sea Launch's flight safety system terminates flight by autonomously terminating thrust without destroying the launch vehicle. The FAA's proposed requirements, like those of the federal launch ranges, would require a flight termination system to destroy a vehicle in order to reduce, if not eliminate, the potential for explosive effects upon debris impact. Sea Launch does not possess the capability to command flight termination from the ground. Additionally, where a U.S. flight termination system provides the ability to avoid terminating flight when an instantaneous impact point is over land, the thrust termination system did not.

Likewise, the FAA reviewed the test procedures, test levels, and maximum predicted environments for the thrust termination system components and compared them to U.S. federal launch range test requirements. Were the Sea Launch thrust termination system held to the requirements proposed in subpart D of part 417, not all requirements would apply and not all were satisfied. As expected there were differences in test requirements between the U.S. and Sea Launch's partners, Yuzhnoye and Energia. The Sea Launch experimental development tests were similar to U.S. qualification tests in that both forms of testing subjected hardware not used for flight to levels greater than maximum predicted environment for design verification. The thrust termination system's experimental development tests, however, were not typically conducted to twice the maximum predicted environment, as done for U.S. qualification tests. Additional differences appeared in Sea Launch's equivalent of acceptance testing. Although Sea Launch tested its flight units, it did not test them to the predicted flight environment.

The flight heritage of the many Russian and Ukrainian launches provided a measure of design verification for the Zenit-3SL rocket stages and thrust termination system components. The Zenit-3SL thrust termination system is based on heritage hardware and software used successfully for decades in launches conducted by the former Soviet Union. Accordingly, Sea Launch's use of a thrust termination system is not akin to the use of an untested or otherwise non-compliant flight safety system, or even to one with a very limited flight history.

Sea Launch also showed that, although its flight safety system did not possess all the functional capabilities required by subpart D, those capabilities that it possessed instead were of comparable reliability on the basis of vehicle and flight safety system heritage and use. Sea Launch informed the FAA that the thrust termination system had worked each time an errant launch vehicle had to be stopped. The FAA's own review found no evidence to the contrary. Historical thrust termination system performance data indicated that there have been over 3000 launches with an automated thrust termination system. Of these flights, 370 failed to achieve their mission objective. Of these 370 mission failures, 110 resulted in errant launch vehicles and Sea Launch reported that the thrust termination system functioned properly in all 110 cases. The FAA conducted an analysis as well. In the end, a combination of analysis, testing and use provided a demonstration of comparability.

The FAA did not base its determination to license Sea Launch solely on finding comparable reliability of the flight safety system. The reduced risk of the proposed flight profile played just as much of a role in the decision. Where the flight safety system presented reduced functional equivalence, the launch operator had to show a corresponding decrease in the proposed risk. Reviewing the risk presented by the Sea Launch mission for its first launch, the FAA concluded that Sea Launch's E_C fell roughly one order of magnitude less than the required E_C of 30×10^{-6}. The FAA employed a conservative reliability number of 0.917 for the Zenit-3SL's upper stage,[9] population densities obtained from the "General Population Distribution (1990), Terrestrial Area and Country Name Information on a one-by-one degree Grid Cell basis (DB1016)," Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, TN, the upper stage dwell time over South America and the risk to the command ship. In addition, the FAA's South American overflight risk analysis accounted for both a failure of the launch vehicle and an inadvertent actuation of the thrust termination system.

Certain other factors underlying a risk determination also took on added significance. The Sea Launch flight profile provided advantages that minimized public exposure. The launch vehicle underwent maximum dynamic pressure at about 60 seconds after liftoff, at a point near the launch site that limited public exposure to only those located on Sea Launch's command ship. The command ship was stationed uprange, outside the launch hazard area. This is significant in that historically most launch vehicle failures occur during the first stage of flight, with many occurring prior to or during maximum dynamic pressure. The instantaneous impact points for Sea Launch's first and second stages were over the Pacific Ocean. The FAA also noted that the third stage, the only stage to expose the public to any statistical risk, was subjected to first and second stage flight environments prior to third stage ignition. If a third stage manufacturing defect existed that resulted in a failure, the failure was more likely to occur prior to third stage ignition. This, plus the fact that a majority of third stage failures occur at ignition, would result in third stage failures that produced impacts in the Pacific Ocean. Public risk was also minimized by the remoteness of the SLLP launch location from populated areas. Nearby islands are located west of the launch point, in the opposite direction of flight. Christmas Island, located about 340 km to the west or uprange of the proposed launch location, is the closest inhabited island to the launch location. The only significant populated area within second stage impact range is Hawaii, located several thousand kilometers to the north.

8. Grandfathering

In the course of preparing this proposed rulemaking, the FAA had to confront questions surrounding flight safety system related waivers granted to launch operators by the federal launch ranges. The FAA is aware that this proposed rulemaking may affect a number of launch operators currently operating under range waivers. There may be other waivers of which the FAA is unaware; and the FAA invites comment on the potential impact of those as well. For example, this proposed rulemaking proposes to require that a launch operator employ a flight termination system that will terminate flight in each launch vehicle stage capable of reaching a populated or other protected area. A number of upper stages, including those of Lockheed Martin's Athena and Orbital Science Corporation's Pegasus and Taurus, do not carry an onboard flight termination system. For these vehicles, once the lower stages that contain the flight termination system have separated and the final stage begins thrusting, the range no longer has the ability to terminate flight. For a proposed launch that does not satisfy all of the proposed regulation's flight termination system requirements, the FAA would require the launch operator to demonstrate that the proposed launch achieves a level of safety that is equivalent to satisfying all the flight termination system and risk requirements. This may be accomplished by further isolating the launch from any population as was discussed in the case of Sea Launch. This may or may not be practical for other launch operators. Accordingly, for a launch occurring outside of a federal launch range, the range waiver may not provide grounds for relaxing the FAA's proposed requirements. Instead, each launch would have to be evaluated for an equivalent level of safety on a case-by-case basis.

A review of the available options suggested that the FAA could grandfather these upper stages or require that they comply with the requirements of this proposed rulemaking with an effective date sufficient to prepare for compliance. The consequences differ for each approach, and each possesses drawbacks. If the FAA grandfathers the upper stages in question, launches will continue to take place in which a propulsive stage can carry its hazards to the public. If the proposed requirements are applied to launch vehicles operating under a range waiver, those launch operators currently operating under waivers may experience an increase in costs, have to redesign their upper stages to include a flight termination system, suffer weight penalties, and obtain access to or possibly install command control systems downrange.

Although there are associated costs, the FAA is not persuaded that they are sufficient to outweigh the need to offer the public a high degree of protection. In the course of analyzing the question, the first important factor the FAA had to consider was that, even if one were to apply the federal launch range waiver process, launch from a location outside of a federal launch range might still result in a requirement for a flight termination system on each upper stage. For example, a launch from the East Coast of the continental United States presents different populations at different distances than would a launch from some other part of the country, which means that a risk analysis will produce different results. What satisfies a range risk analysis for Wallops Flight Facility or Cape Canaveral might not for a launch from a non-federal launch site in another part of the country. Additionally, the usual equities that weigh in favor of grandfathering are absent from this situation. Unlike the

[9] The approach results in an overall failure rate almost three times the observed failure rate for the upper stage from all possible causes.

aircraft manufacturing industry, for example, the launch industry builds a new launch vehicle for each use, which permits changes in design more easily than retrofitting a fleet of aircraft. Also, the launch industry adjusts each launch vehicle configuration to some extent to meet the mission requirements for each launch so that a change in safety requirements provides merely one more change to what may be a list of such changes. The FAA is interested in comments on this proposal, both in the context of launches from new launch sites and for launches at current ranges. Should a launch system operating under a federal range waiver be grandfathered under part 417 or be expected to achieve the same level of safety? Does a waiver provide an equivalent level of safety?

G. Ground Safety

This proposed rulemaking addresses ground safety through the imposition of launch processing requirements that would apply both to a launch operator already in possession of a launch license and to an applicant for a launch license. Like the requirements governing flight safety analysis and a flight safety system, an applicant for a license must demonstrate that it will meet the requirements of part 417.

Proposed part 417 would contain ground safety requirements that apply to the preflight preparation of a launch vehicle and related post-launch activities [10] at a launch site in the United States. The Act defines ''launch'' to include not only the flight of a launch vehicle but ''activities involved in the preparation of a launch vehicle or payload for launch when those activities take place at a launch site in the United States.'' 49 U.S.C. 70102(3). Accordingly, the FAA intends to employ the term ''launch processing'' to describe the preparation for flight of a launch vehicle at a launch site. Because the Act gives the FAA licensing authority only over the preparatory activities at a launch site in the United States, the FAA does not seek to impose its requirements under this proposed subpart to launch processing activities that may occur outside the United States.

The ground safety requirements in this subpart would apply to all launch processing activities performed by, or on behalf of, a launch operator. The proposed requirements would attempt to ensure that safety issues unique to launch are addressed, while at the same time avoiding duplication with the requirements of other civilian regulatory agencies.

In addressing the area of ground safety the FAA had to consider, first and foremost, its goal of codifying safety standards that govern the unique issues associated with launch. Secondary to this goal, the FAA faced the question of overlapping jurisdiction between the FAA and the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC). This overlapping jurisdiction raised the question of how much information concerning ground safety the FAA should request in the course of a license application review, and issues regarding the consequences to a launch operator and the FAA in undertaking such a review. As a means of resolving the issues raised by such overlap, the FAA proposes to require that an applicant assess its hazards and institute controls that will keep those hazards from reaching the public.

Some background may be in order at the outset. Most of a U.S. launch operator's launch site experience with federal government safety oversight has taken place at the federal launch ranges. *See* Commercial Space Transportation Licensing Regulations, 64 FR at 19596–597, April 21, 1999. The federal launch ranges are not civilian regulatory agencies but operators of launch sites in their own right. A federal launch range offers its launch site to launch operators for launch. It coordinates and schedules its customers. Its personnel may conduct or participate in hazardous activities. To use a federal launch range, a launch operator must agree to abide by the safety requirements of the range. The federal launch ranges not only impose their own requirements, but also implement the requirements of civilian regulatory agencies such as OSHA, the EPA and others. Accordingly, the requirements that they have developed over the years have combined unique responses to the particular characteristics of launch as well as at the same time responding to the requirements of civilian regulatory agencies. In one sense, the federal launch ranges have stood in for some of these agencies, including the FAA, in ensuring safety through their oversight of the commercial and government contractor launch operators using their facilities.

With respect to ground safety, the FAA proposes to require launch operators to engage in a process derived from principles underlying a system safety process already familiar to the FAA's current licensees, both through their work as contractors for government launches and as users of the federal launch ranges. A launch operator would be required to identify its hazards, assess the risks associated to each of those hazards and implement hazard controls. In light of the existence of regulatory requirements established by the civilian agencies mentioned above, a launch operator will find that many of the hazard controls that a launch operator would have to develop under proposed part 417 are addressed through other regulatory regimes.

The FAA has neither the resources nor the intention of second guessing the regulatory requirements of other agencies nor purporting to issue approvals on their behalf. Under the Act, all requirements of the laws of the United States applicable to the launch of a launch vehicle are requirements for a launch license. 49 U.S.C. 70105(b)(1). The Act also provides, however, that, except as otherwise provided by the requirements of the statute, a launch operator ''is not required to obtain from an executive agency a license, approval, waiver, or exemption to launch a launch vehicle.'' 49 U.S.C. § 70117(a).[11] The FAA may prescribe by regulation that a requirement of a law of the United States not be a requirement for a license, if, after consulting with the head of the appropriate executive agency, the FAA decides that the requirement is not necessary to protect, in relevant part, the public health and safety and safety of property. 49 U.S.C. 70105(b)(2)(C). This rulemaking does not affect the regulatory requirements of other executive agencies.

Other agencies impose similar requirements to those being proposed here. For example, the FAA's proposed requirements strongly resemble a more general version of OSHA's process safety management (PSM) requirements. *See* 29 CFR 1910.119. This means that a launch operator's PSM plan designed to satisfy OSHA's requirements for worker safety may serve the dual purpose, in a number of contexts, of protecting the public as well. The FAA is aware of the confines of the jurisdiction OSHA seeks to exercise;[12] however, especially in the context of avoiding catastrophic events, what protects worker safety may also protect

[10] Although post-launch ground activities are not licensed, Commercial Space Transportation Licensing Regulations, 64 FR 19586, 19594 (1999), the FAA will exercise its jurisdiction with respect to safety issues arising out of the end of launch.

[11] To date, the FAA has not exercised its exclusive jurisdiction over launch processing at a launch site, relying, for example, on the NRC's licensing of the handling of nuclear materials at federal launch ranges.

[12] ''In the event a standard protects on its face a class of persons larger than employees, the standard shall be applicable under this part only to employees and their employment and places of employment.'' 29 CFR 1910.5(d).

the public, and the FAA proposes to consider such comparisons in the course of the licensing process. If a PSM plan that a launch operator prepares for OSHA contains hazard controls that would protect the public as well, the launch operator need not duplicate the work it does to comply with OSHA's requirements, but may, instead, point the FAA to the portion of the PSM plan relevant to public safety in order to satisfy the FAA's concerns. In reviewing a PSM plan, the FAA would not be opining on the adequacy of the PSM plan for purposes of worker safety.[13]

Likewise, the EPA administers, among other relevant laws, the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. 11001 *et seq.* (EPCRA). That statute applies to facilities where a listed substance is present above a designated quantity, 42 U.S.C. 11002(b), and subjects such a facility, in relevant part, to notification, planning, response and training requirements. *See, e.g.,* 42 U.S.C. 11003, 11004 and 11005.

The NRC regulates and licenses activities involving radioactive materials under the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011–2281. The NRC imposes standards for protection against radiation. *See, e.g.,* 10 CFR part 20. Those regulations prohibit, for example, the release of radioactive materials to unrestricted areas above specified limits and to individual members of the public. 10 CFR 20.1301. Additionally, the EPA possesses generally applicable environmental radiation standards in 40 CFR part 190.

In short, a launch operator needs to be aware of the requirements of these other regulatory agencies and abide by them for launch processing activities at a U.S. launch site and any other location where these agencies have jurisdiction. This discussion focuses on the roles of these particular agencies because much of the safety a launch operator should achieve will be obtained through compliance with the specifics of their regulations. The very broad nature of the FAA's proposed regulations governing preparation for flight of a launch vehicle will obviously encompass much of what these other agencies already address. The FAA anticipates that during the course of pre-application consultation and the license application process itself, the FAA and an applicant will be able to review the nature of the applicant's proposed activities. The applicant will be able to explain and the FAA ascertain whether the launch operator's activities are of such a nature and scope as to fall within the ambit of these other agencies, and, if they do not, the applicant will provide a convincing demonstration to the FAA as to how it will satisfy part 417's requirements.

The ground safety application requirements of part 415 are intended to demonstrate that an applicant can and will satisfy the requirements of part 417. Part 417 requires a launch operator to perform a ground safety analysis. Part 415 asks for a ground safety analysis report. To satisfy the part 417 requirement for ground safety analysis, a launch operator would identify each potential public hazard, any and all associated causes, and any and all hazard controls that a launch operator would implement to keep each hazard from affecting the public. A launch operator's ground safety analysis would be required to demonstrate whether its launch vehicle hardware and launch processing present hazards to the public. The part 415 license application requirement would require an applicant to submit a more abbreviated ground safety analysis report that would review each launch related system and operation and identify potential public hazards and the controls to be implemented to protect the public from each hazard. This report would be required to describe each system and operation and show that all associated public hazards have been identified and controlled and would identify supporting documentation. The FAA might, in the course of the application review or in the course of compliance monitoring, ask to review all or parts of the supporting documentation that provides further detail on a ground safety analysis.

Part 415 would also require a launch operator to submit to the FAA a ground safety plan. A ground safety plan would specify the ground safety rules and procedures that a launch operator would implement to protect public safety. This plan would describe implementation of the hazard controls identified by an applicant's ground safety analysis and the specific ground safety requirements provided in subpart E of part 417. The difference between a ground safety analysis report and a ground safety plan is that the ground safety analysis report would describe the hazard controls and the ground safety plan would describe how hazard controls would be implemented. A ground safety plan would, for example, provide the location of safety clear zones and hazard areas and describe verification processes and the safety equipment and support requirements for each task that creates a hazard to the public.

In addition to the flight and ground safety plans, part 415 would require a series of other launch safety plans as well. These would include an emergency response plan, an accident investigation plan, a launch support equipment and instrumentation plan, a configuration management and control plan, a communications plan, a frequency management plan, a security plan, a public coordination plan, local plans and agreements, test plans, countdown plans, launch abort or delay recovery plan, and a license modification plan.

As discussed earlier, other agencies may also regulate in some of these areas. For example, the accident investigation plan requirement may be satisfied by using accident investigation procedures developed in accordance with the requirements of OSHA at 29 CFR 1910.119 and 120, and the EPA at 40 CFR part 68, to the extent that the procedures include the elements required by part 417.[14] OSHA's standard at 29 CFR 1910.119 includes provisions for investigating incidents and emergency response. *See* 29 CFR 1910.119(m) and (n). In addition, 29 CFR 1910.120, which addresses hazardous waste operations and emergency response (HAZWOPER), provides for emergency response planning for operations involving hazardous materials, including those listed by the Department of Transportation under 49 CFR 172.101.[15]

EPA's requirements at 40 CFR 68 also include standards for incident investigation and emergency response. *See* 40 CFR 68.60, 68.81, 68.90, and 68.180. Compliance with 42 U.S.C. 11003, Emergency Planning and Community Right-to-Know, may satisfy many of the emergency response provisions.

Part 417 would contain the requirements governing the safety of a launch operator's launch processing activities themselves. A launch operator would be responsible for the safe conduct of preflight preparation of its launch vehicle at a launch site in the United States and related post-launch

[13] On a related topic, a launch operator may anticipate that the extent of its utilization of the system safety concepts inherent in such approaches as PSM may affect the FAA's maximum probable loss determination for financial responsibility under 14 CFR part 440.

[14] The EPA's requirements in 40 CFR 68 apply to "incidents which resulted in, or could reasonably have resulted in a catastrophic release." 40 CFR 68.60(a). OSHA's requirements in 29 CFR 1910.119 are similar, applying to "each incident which resulted in, or could reasonably have resulted in a catastrophic release of a highly hazardous chemical in the workplace." 29 CFR 1910.119(m)(1).

[15] The FAA's commercial space regulations, section 401.5, define hazardous materials as those defined in 49 CFR 172.101.

activities. Subpart E of part 417 would contain the requirements for how a launch operator should perform a ground safety analysis, implement hazard control procedures and system hazard controls, define and implement a safety clear zone for hazardous operations, define hazard areas where public access is limited, implement hazard control procedures after a launch or a launch attempt, and would contain the requirements governing propellants and explosives.

The ground safety analysis would serve as the basis for much of a launch operator's license application and for the development and implementation of hazard controls for its launch processing activities. The requirements governing the ground safety analysis would differentiate between hazards on the basis of whether they are public hazards, launch location hazards, employee hazards, and whether they are credible or not.

The hazard category would drive the nature of the controls that must be employed to protect the public. A public hazard would mean any hazard that extends beyond the launch location under the control of the launch operator. Any system that poses a public hazard would be required to be single fault tolerant to protect against the initiation of a hazardous event that could affect the public. A launch location hazard would mean any hazard that extends beyond individuals performing a launch operator's work, but that stays within the confines of the location under the control of the launch operator. A launch location hazard may also affect the public depending on the public access controls employed. Public hazards and launch location hazards include blast overpressure and fragmentation resulting from an explosion, fire and deflagration, and the sudden release of hazardous materials into the air, water or ground, and inadvertent ignition of a propulsive launch vehicle payload stage or motor. Additional launch location hazards that may affect the public when the public is allowed access include oxygen deficient environments, unguarded electrical circuits or machinery, and fall hazards. A launch operator would be required to implement hazard areas and safety clear zones for public hazards and launch location hazards to ensure that any member of the public is kept at a safe distance. A launch operator may elect to treat its entire launch location as a safety clear zone at all times and never allow any member of the public to enter. This would simplify the procedural hazard controls that the FAA would require for protecting the public. However, based on experience at the federal launch ranges, a launch operator would likely need or desire to allow public access to the launch location. The proposed rule would allow public access to the launch location provided that the launch operator's systems incorporate specific safety designs and that specific procedural controls are implemented to ensure the safety of any visiting members of the public.

IV. Part Analysis

A. Part 413—License Application Procedures

Proposed part 413 continues to describe those license application procedures applicable to all license applications. The application procedures apply to license applications to launch a launch vehicle or to operate a launch site. More specific requirements applicable to obtaining a launch license or launch site operator license are set forth in parts 415 and 420. The FAA proposes to amend § 413.7 by adding a new paragraph (d) to require a license applicant to employ a consistent measurement system for each analysis, whether English or metric, in its application and licensing information. Errors stemming from failures to convert between English and metric units have resulted in mission failures of recent vintage. It is evident that such errors may have safety ramifications as well.

B. Part 415 Launch License

Part 415 will continue to contain requirements for obtaining a license to launch a launch vehicle. Proposed changes to part 415 would establish requirements for submitting an application to obtain a license to launch a launch vehicle from a non-federal launch site. Requirements applicable to obtaining a license to launch from a federal launch range will continue to be covered in subpart C of part 415. The application requirements specific to obtaining a license to launch from a non-federal launch site will be added to subpart F of part 415. Subpart F describes the material that a launch operator must submit to the FAA to demonstrate its ability to meet the part 417 safety responsibilities and requirements for launch. The provisions of part 415 as a whole apply to prospective and licensed launch operators and, where applicable, to prospective payload owners and operators, and should be read in conjunction with the general application requirements of part 413.

1. Part 415, Subpart D, Payload Review and Determination

The FAA proposes to amend § 415.51 to clarify that payloads otherwise exempted from an FAA payload review and determination are nonetheless still subject to review for purposes of launch safety. The particulars of this change are discussed earlier in this notice.

2. Part 415, Subpart E, Post—Licensing Requirements—Launch License Terms and Conditions

The FAA proposes to amend § 415.73(b)(2) to delete ''submitted in accordance with subpart D.'' The reference to subpart D appears to have been an error because subpart D only applies to a payload determination. In fact, the application amendment and license modification requirements apply regardless of whether the change is in subpart D or not.

3. Part 415, Subpart F, Safety Review and Approval for Launch From a non-Federal Launch Site

Proposed changes to subpart F of part 415 would apply to the safety review that the FAA requires as part of the licensing process for launch from a non-federal launch site. Section 415.101 would establish the scope of subpart F, which contains requirements for the application material that an applicant would submit to the FAA to demonstrate that it will meet the safety responsibilities and requirements for launch. Subpart F would also include all administrative requirements for submitting a license application, such as when data would have to be submitted and the form and content of each data submission. Material submitted to the FAA as required by proposed subpart F would measure an applicant's ability to comply with the launch operator responsibilities and technical requirements in proposed part 417. The related requirements in part 417 are referenced in this subpart where applicable. To facilitate the generation of the safety review material required by this subpart, an applicant would have to first become familiar with the launch operator requirements in part 417. The requirements in proposed subpart F apply to orbital launch vehicles and guided and unguided suborbital vehicles. Requirements in proposed § 415.103 through 415.125 apply to all proposed launches. The flight safety system related requirements in proposed §§ 415.127 through 415.131 apply to orbital launch vehicles and guided suborbital launch vehicles that use a flight safety system to ensure public safety

Section 415.103 would provide general FAA criteria for approval of an application to launch from a non-federal launch site. The FAA would conduct a safety review to determine whether an applicant is capable of launching a launch vehicle and its payload without jeopardizing public health and safety and safety of property. The FAA would issue a safety approval if an applicant satisfies the application requirements of subpart F and demonstrates, through the application process, that it will meet the safety responsibilities and requirements for launch from a non-federal launch site provided in part 417. The FAA will advise an applicant, in writing, of any issue raised during a safety review that would impede issuance of a safety approval. An applicant would have the option of responding in writing, or revising its license application.

Section 415.105 would require that an applicant conduct at least one pre-application consultation meeting with the FAA when planning to apply for a new launch license. This meeting would take place no later than 24 months before an applicant brings any launch vehicle to the proposed launch site and prior to an applicant's preparation of the flight safety analysis for its application. A launch operator must have a license before it brings a launch vehicle to the launch site and the application flight safety analysis is the earliest demonstration of an applicant's ability to protect public safety during launch. Section 415.105 would also provide requirements for the data to be presented during a pre-application consultation. This meeting would allow the FAA to review a proposed launch and provide a potential applicant with direction with respect to the licensing process and the required safety demonstrations. The FAA's proposed regulations for launch are meant to cover a broad range of launch vehicles and mission profiles. A pre-application consultation is considered necessary to focus an applicant on the applicable requirements and to ensure that the licensing process proceeds as efficiently as possible.

Section 415.107 would require that an applicant prepare a safety review document that contains all the information required by the FAA to conduct a safety review of a proposed launch and would address all aspects of an applicant's proposed launch safety program. This section would provide specific requirements for the form and content of an applicant's safety review document and reference appendix A to part 415, which would provide an outline for the document. Specific requirements for the content of each section identified in the outline would be provided in the remaining sections of subpart F. An applicant would identify any item incomplete at the time of a submission and provide a plan and schedule for completing the item. Any incomplete item would have to be finalized before conduct of the related operation. Once licensed, a licensee would be required to conduct its launch in accordance with an approved safety review document. A safety review document with the proposed standardized form and content would allow for efficiencies in the FAA's licensing review and approval process The FAA has 180 days to make a license determination upon receipt of a sufficiently complete application and the latest that a launch operator must have a license in place is when the launch vehicle arrives at the launch site. In order to facilitate these existing requirements, the FAA is proposing that the launch operator would have to submit a sufficiently complete safety review document no later than six months before the applicant brings any launch vehicle to the proposed launch site. The final safety review document would be used by a licensee and the FAA for ensuring the implementation of a launch safety program that protects public safety in accordance with part 417 and any special terms of a license.

Proposed § 415.109 would identify data describing a proposed launch that would be submitted to the FAA as part of an applicant's safety review document. The intent of this data is to provide the FAA with a general understanding of an applicant's proposed launch as needed to begin a safety review. This data would also allow for further focusing of the safety review process to the type of launch operations and hazards involved. An applicant would be required to identify each launch vehicle, each payload, and any payload customer. An applicant would be required to provide a launch schedule, launch site description, launch vehicle description, payload description, planned launch vehicle trajectory, description and time after liftoff of each launch vehicle staging event, and data describing the proposed launch vehicle's performance characteristics.

Proposed § 415.111 would ensure that a launch operator applicant's administrative information is submitted prior to or as part of a safety review application. Because an applicant may request a safety review independently of the other required licensing reviews, proposed § 415.111 would reference the specific launch operator administrative information identified in § 413.7 under the general license application procedures. If this information was previously submitted, an applicant's safety review document could reference the previously submitted documentation. Section 415.111 would also identify the launch operator organization data that an applicant would submit to verify compliance with the safety responsibilities and requirements of part 417. This data would include organizational charts, position descriptions, and information on an applicant's program for qualification, training, and certification of personnel who perform critical safety functions.

Proposed § 415.113 would require an applicant to submit information on how it will satisfy the personnel certification program requirements of proposed § 417.105. The FAA proposes that an applicant provide a summary description of its personnel certification program and other information that the FAA will use to evaluate the applicant's program. An applicant would be required to identify, by position, those individuals who implement the program and submit a copy of any program documentation used to implement the program and a table listing each safety critical task that would be performed by certified personnel. For each task, the table would be required to identify by position the individual who reviews personnel qualifications and certifies personnel for performing the task.

Proposed § 415.115 would require an applicant to submit information related to an applicant's program for protecting the public from hazards associated with the flight of a launch vehicle. Section 415.115(a) would require the submission of flight safety analysis data that demonstrated an applicant's ability to conduct a proposed launch in accordance with the public safety criteria required by part 417. This data would include information such as average number of expected casualties, individual risk, and ship and aircraft impact probabilities. This analysis data would also demonstrate an applicant's ability to operate a launch vehicle that uses a flight safety system to protect public safety or to operate an unguided suborbital rocket that uses a wind weighting safety system that protects the public. Requirements for performing a flight safety analysis would be provided in proposed part 417, subpart C. Section 415.115(a) would require that the flight safety analysis data submitted at the time of application be complete as specified in part 417 while allowing for situations where an analysis might need to be updated as a proposed launch date approaches. An applicant is not required to finalize a flight safety analysis before the FAA would issue a license. An applicant would be required to perform the analysis with the best input data that is available at the time of application. An applicant would identify any analysis product that may change, describe what needs to be done to finalize the product and identify when before flight it will be finalized. An applicant would be required to submit its flight safety analysis data no later than 18 months before the applicant brings any launch vehicle to the proposed launch site. The flight safety analysis data for a new license may be extensive, depending upon the launch characteristics.

Significant FAA resources will be required to review the analysis data and ensure that the safety requirements of part 417 will be met for the proposed launch or series of launches. Similar coordination between a launch operator and the range safety organization for launch from a federal range typically begins two years or more before launch. For licensed launches, a launch operator must have a license before it brings any launch vehicle to the launch site. The FAA proposes that the 18-month requirement for the application flight safety analysis, coupled with the pre-application consultation required 24-months before the applicant brings any launch vehicle to the proposed launch site as proposed in § 415.105, provides an acceptable time frame for the necessary review and coordination before the launch operator would need a license, provided that all the analysis data is complete and submitted on time. The FAA will coordinate with an applicant on its flight safety analysis much earlier than required by the licensing process if an applicant so desires to provide greater assurance that the safety review can be completed in time for a planned launch date. An applicant's safety review document must describe each analysis method employed to meet the analysis requirements of part 417, subpart C, and contain the analysis products for each of the analyses. Once licensed, a launch operator would be required to perform flight safety analysis for each launch and submit launch specific analysis products using the analysis methods approved by the FAA during the licensing process or as a license modification. The proposed regulations would allow for a launch operator to perform an alternate flight safety analysis. The FAA would approve an alternate analysis if an applicant provides a clear and convincing demonstration that its proposed analysis provides an equivalent level of safety to that required by part 417, subpart C. A launch operator would be required to obtain FAA approval of an alternate analysis before its license application would be found sufficiently complete under § 413.11 to commence review.

Section 415.115(b) would require an applicant's safety review document to contain conjunction on launch assessment input data for the first proposed launch. The input data submitted as part of a license application would be required to satisfy the requirements of proposed § 417.233. The FAA will evaluate the launch operator's ability to prepare the input data and initiate coordination with United States Space Command. An applicant need not obtain a conjunction on launch assessment from United States Space Command prior to being issued a license.

Section 415.115(c) would require an applicant, for each proposed launch, to identify the type and quantity of any radionuclide on a launch vehicle or payload. The FAA proposes that for each radionuclide, an applicant provide the FAA with a reference list of all documentation that addresses the safety of its intended use and indicates approval by the Nuclear Regulatory Commission for launch processing. An applicant would provide radionuclide information to the FAA at the pre-application consultation. The FAA proposes to evaluate the flight of any radionuclide on a case-by-case basis. For such an evaluation the FAA's analysis will likely be informed by and reflect the National Aeronautics and Space Council, ''Nuclear Safety Review and Approval Procedure for Minor Radioactive Sources in Space Operations'' and the Presidential Decision Directive, National Security Council (PDD/NSC) 25, ''Scientific or Technological Experiments with Possible Large-Scale Adverse Environmental Effects and Launch of Nuclear Systems into Space.

Section 415.115(d) would contain requirements for an applicant to submit a flight safety plan that specifies the flight safety rules, limits, and criteria identified by an applicant's flight safety analysis and the specific flight safety requirements of part 417 to be implemented for launch. An applicant's flight safety plan need not be restricted to public safety related issues and may address other flight safety issues as well so as to be all-inclusive. An applicant's flight safety plan would identify flight safety personnel and flight safety rules for each launch including flight commit criteria and flight termination rules. The plan would contain a summary description of any flight safety system and its operation including any preflight system tests to be performed. The flight safety plan would contain a summary of the launch trajectory and identify the flight hazard areas and safety clear zones established for each launch and procedures for surveillance and clearance of these areas. The flight safety plan would identify any support systems and services implemented as part of ensuring flight safety, including any aircraft and ships and procedures for their use during flight. A flight safety plan would contain a summary of the flight safety related tests, reviews, rehearsals, and other critical safety activities conducted according to proposed §§ 417.115 through 417.121. A flight safety plan would contain or reference procedures for accomplishing all flight safety activities. For an unguided suborbital rocket, a flight safety plan would contain the additional information required by proposed section 417.125.

Section 415.115(e) would require that if any of the natural and triggered lightning flight commit criteria in appendix G of part 417 do not apply to a proposed launch, an applicant's safety review document must contain a demonstration of the reason that each criterion does not apply. The criteria in appendix G cover a broad range of conditions, which apply to most launches from most launch sites; however, there may be exceptions.

Section 415.115(f) would require that, for the launch of an unguided suborbital rocket, the flight safety data submitted in an applicant's safety review document must meet the other requirements of proposed section 415.115 and demonstrate compliance with the requirements contained in proposed §§ 417.125 and 417.235. In addition to meeting the requirements in paragraph (d) of proposed § 415.115, an applicant's flight safety plan would be required to contain the launch angle limits, procedures for measurement of launch day winds and performing wind weighting, identification of flight safety personnel qualifications and roles for performing wind weighting, and the procedures for any recovery of a launch vehicle component or payload.

Proposed section 415.117 would require an applicant to submit a ground safety analysis report that would review each launch related system and operation and identify potential public hazards and the controls to be implemented to protect the public from each hazard. The report would describe all the launch operator's system and operations and show that all hazards that could affect the public have been identified and controlled. A hazard that could affect the public is any hazard that extends beyond the boundaries of the launch location under the control of the individuals doing the work and that has the potential to effect the public regardless of where the public or property belonging to the public might be. An applicant would perform a ground safety analysis in accordance with the requirements in part 417, subpart E.

Section 415.117(a) would require a ground safety analysis report to be submitted as part of an applicant's safety review document and would contain requirements for the report's contents, timing requirements for submitting the report during the licensing process, requirements for informing the FAA of any changes, requirements for following the format prescribed by appendix C of proposed part 415, and verifiability and signature requirements.

Proposed section 415.117(b) would require an applicant to submit a ground safety plan that specifies the ground safety rules and procedures to be implemented to protect public safety. This plan would describe implementation of the hazard controls identified by an applicant's ground safety analysis and the specific ground safety requirements provided in subpart E of part 417. This plan need not be restricted to public safety related issues and may address other ground safety issues if an applicant intends it for all-inclusive uses. For example, if a launch operator intends to use the ground safety plan to address worker safety issues in response to OSHA requirements as well as the FAA's public safety requirements, the launch operator need not delete the material regarding worker safety. This is in keeping with the FAA's goal of not duplicating other agency requirements. The FAA does not wish, however, to drive launch operators into segregating what are otherwise intended as integrated safety plans.

Proposed § 415.119 would require a series of launch plans in addition to the flight and ground safety plans required by proposed §§ 415.115 and 415.117. Section 415.119(a) would require that each plan define how any associated launch operation is performed, identify operation personnel and their duties, contain mission specific information, and reference written procedures needed to ensure public safety. Each plan would identify personnel by position who implement the plan. Each plan must identify personnel by position who approve the baseline plan and any related procedures and any modification to the plan or procedures. The FAA would require that an applicant's safety review document include a copy of each launch plan to be implemented in accordance with part 417. The FAA will review these plans and procedures for compliance with part 417 and will reference these plans when performing inspections of a licensee's launch processing and flight operations.

Within each launch plan, an applicant shall provide any associated launch safety rules that satisfy proposed § 417.113. These written rules will govern operations conducted during launch processing and flight by identifying the environmental conditions and status of the launch vehicle, launch support equipment, and personnel under which operations may be conducted or allowed to continue without adversely affecting public safety. An applicant's launch safety rules would include, but need not be limited to flight commit criteria, weather constraints, flight termination rules, and launch crew rest rules. In addition to rules governing the flight of a launch vehicle, an applicant must provide rules that govern each preflight ground operation that has the potential to adversely effect public safety. In addition to complying with the generally applicable launch safety rules specified in proposed § 417.113, an applicant must develop launch safety rules specific to its planned launch based on the flight and ground safety analyses required by part 417.

Proposed § 415.119(b) through (n) would require launch plans in addition to the required flight and ground safety plans. These would include an emergency response plan, an accident investigation plan, a launch support equipment and instrumentation plan, a configuration management and control plan, a communications plan, a frequency management plan, a security and hazard area surveillance plan, a public coordination plan, any local agreements and plans, test plans, countdown plan, launch abort or delay recovery and recycle plan, a license modification plan, and a flight termination system electronic piece parts program plan. An applicant would be required to submit any plans and agreements with any local authority at or near a launch site whose support is needed to ensure public safety during launch processing and flight. Agreements with local authorities such as any site operator, U.S Coast Guard, and local air traffic control would have to be in place for the FAA to issue a license. Requirements for the implementation of these agreements are contained in part 417 and part 420. An applicant would also be required to submit an accident investigation plan that meets the requirements in part 415, subpart C, § 415.41. The accident investigation requirements for launch from a federal launch range in part 415, subpart C are also applicable to launch from a non-federal launch site. The FAA's approach to developing regulatory requirements is for the requirements to be performance oriented wherever possible, thereby allowing for any innovation that a launch operator may develop for their operations provided it accomplishes the related performance requirement. A launch operator's launch plans would document the launch operator's approach for compliance with the requirements. Each plan would become part of the terms of a license and the FAA would inspect a licensee for compliance with the license's launch plans.

Section 415.121 would require that an applicant submit a schedule for the tests, reviews, rehearsals, and safety critical launch operations conducted according to part 417. The schedule must show start and stop times for each activity referenced to time of liftoff for the first planned launch. An applicant would also be required to provide a written summary and point-of-contact for each scheduled activity. The FAA will review these schedules to verify an applicant's plans for complying with part 417. This data also will allow the FAA to focus on activities that are critical to public safety for each specific launch and efficiently schedule license compliance inspections.

Section 415.123 would contain requirements for the material that an applicant would be required to submit describing computing systems and software that perform a software safety critical function to be implemented in accordance with proposed § 417.123 and proposed appendix H of part 417. Reliance on computing systems and software as important components in flight safety systems and other safety critical systems and operations is expected to increase. The proposed requirements for safety critical computing systems and software were adapted from federal range requirements. The applicant would be required to demonstrate an effective program for ensuring the reliability of computing system and software that must operate properly to provide for public safety.

Section 415.125 would require an applicant to identify any public safety related policy and practice that is unique to the proposed launch according to proposed § 417.127. The FAA would require an applicant to submit a written discussion on how each unique safety policy or practice provided for public safety.

Section 415.127 would identify the data that an applicant would be required to submit to describe any flight safety system employed during a proposed launch. The FAA proposes to define a flight safety system as the system that provides a means of control during flight for preventing a launch vehicle and any component, including any payload, from reaching any populated or other protected area in the event of a launch vehicle failure. Under the FAA's proposed definition, a flight safety system would include hardware and software used to protect the public and the functions of any personnel who operated flight safety system hardware and software. The proposed requirements for the applicability, design, qualification, and implementation of a flight safety system provided in part 417 and its appendices are a critical part of ensuring public safety. Ensuring that an applicant will implement a highly reliable flight safety system in accordance with part 417 would be one of the major objectives of the FAA's safety review of the proposed launch. Accordingly, the FAA proposes to require that data related to an applicant's flight safety system be thorough and be submitted no later than 18 months before the applicant brings any launch vehicle to the proposed launch site. An applicant also would be required to participate with the FAA in technical meetings to facilitate the review and approval of a flight safety system. An applicant's flight safety system data would be submitted in the same time frame as an applicant's flight safety analysis, thus allowing for efficient coordination of flight safety analysis and flight safety system issues.

The intent of proposed § 415.127 is to identify the descriptions, diagrams, schematics, tables, and charts needed by the FAA to verify compliance with the flight safety system requirements of part 417. Proposed part 417 and its appendices contain a significant number of specific system and component requirements. An applicant would be required to comply with each requirement that is applicable to its flight safety system or an applicant would be permitted to show that its system meets the intent of an applicable requirement. The applicability of each flight safety system requirement would be established through the FAA's review and approval of an applicant's flight safety system compliance matrix. This matrix would identify each requirement in part 417 and its appendices and indicate whether or not the requirement applied to an applicant's flight safety system. For each applicable requirement the matrix would indicate strict compliance or that the applicant's system would meet the intent of the requirement through other means, which would have to be further demonstrated and documented. Once approved as part of a launch license, this matrix and any supporting documentation would dictate the design and configuration of a licensee's flight safety system. Any change to a licensee's flight safety system would have to be submitted to the FAA for approval as a license modification.

Proposed § 415.129 would identify the test data that an applicant must submit regarding any flight safety system used for a proposed launch. Part 417 and its appendices would contain flight safety system test requirements intended to ensure that an applicant implements a highly reliable flight safety system. Ensuring the implementation of a flight safety system test program in accordance with part 417 will be another major objective of the FAA safety review. Part 417 would require the preparation of test plans, reports, and procedures. Section 415.129 would require that an applicant submit these documents and a test compliance matrix. This matrix would identify each test requirement in part 417 and its appendices and indicate whether or not the requirement applies to an applicant's flight safety system test program. For each applicable requirement the matrix would be required to indicate compliance or that the applicant's test program would meet the intent of the requirement through other means, which must be further demonstrated and documented. Once approved as part of a launch license, this matrix, and any supporting documentation, would dictate the flight safety system testing that must be implemented by a licensee. Any change to a licensee's test program would have to be submitted to the FAA for approval as a license modification. The proposed regulations would require that the test data be submitted to the FAA no later than 15 months before the applicant brings any launch vehicle to the proposed launch site; however, all flight safety system testing need not be completed before the FAA would issue a launch license. A licensee would be required to successfully complete all testing and submit completed test reports prior to flight.

Proposed § 415.131 would require an applicant to identify each flight safety system crew position and role that it planned to employ during the conduct of a launch. The FAA would require an applicant to identify the senior flight safety official by name and submit documentation on this individual's qualifications for the position showing compliance with the requirements in proposed § 417.343. The FAA would require an applicant to describe the certification and training program for the flight safety system crew.

4. Part 415, Appendix B, Safety Review Document Outline

Proposed appendix B of part 415 would contain the format and numbering scheme for a safety review document to be submitted as part of an application for a launch license. Administrative requirements applicable to a safety review document are provided in proposed § 415.107. Requirements for the form and content of each part of a safety review document are provided in parts 413 and 415. Technical requirements related to the information contained in a safety review document are provided in part 417. The applicable sections of parts 413, 415, and 417 would be referenced in the outline provided in proposed appendix A. A safety review document with the proposed standardized format and numbering scheme would allow for efficiencies in the FAA's licensing review and approval process.

5. Part 415, Appendix C, Ground Safety Analysis Report

Proposed appendix C of part 415 would provide the format and content requirements for a ground safety analysis report. Proposed section C415.1 would require an applicant to perform a ground safety analysis in accordance with subpart E of part 417 and submit a ground safety analysis report in accordance with proposed appendix C of part 415. A ground safety analysis report would contain hazard analyses that describe all hazard controls, and describe a launch operator's hardware, software, and operations so that the FAA may assess the adequacy of the hazard analysis. A launch operator would document all hazard analyses on hazard analysis forms according to proposed section C415.3(d) and submit systems and operations descriptions as a separate volume of the report. A ground safety analysis report would include a table of contents and provide definitions of any acronyms and unique terms used in the report. A launch operator's ground safety analysis report may reference other documents submitted to the FAA that contain the information required by this appendix wherever applicable without repeating the data.

Proposed section C415.3 would describe the chapters that make up a ground safety analysis report. A ground safety analysis report must include an introductory chapter, a chapter that provides a summary of safety information about the launch vehicle and operations, including the payload and any flight safety system, and a chapter that provides safety information about each launch vehicle system, operation, and any associated interfaces. A ground safety analysis report must include a chapter containing a hazard analysis that identifies each hazard and all hazard controls to be implemented. A ground safety analysis report must also include a chapter containing data that supports the hazard analysis. Supporting data may include documents such as memoranda that explain why no public hazard exists for a particular hazardous system operation, or supporting data may display tables that consolidate hazard analysis information.

Proposed section C415.3(c) would contain the format requirements for describing systems and operations. A launch operator would also describe two kinds of hazards related to its flight safety system that could adversely affect the public. A launch operator would address potential inadvertent activation of a flight safety system, which could result in harm to the public, and the hazards created by ground operations that could adversely affect the reliability of the flight safety system itself. Any hazard controls implemented would be identified as part of the hazard analysis. For hazardous materials, a launch operator would identify any hazardous materials used in its flight and ground systems including the quantity and location of each. A launch operator would provide a summary of its approach to protecting the public from toxic plumes, including the toxic concentration thresholds used for controlling any public exposure and a description of any local agreements. Section C415.3(c) would also contain requirements for describing the subsystems of each hazardous system identified by the analysis. Proposed section C415.3(d) would contain an example hazard analysis form and an explanation of how to fill out the form. In addition to providing a launch operator further clarification on the data submitted as part of a ground safety analysis report, the use of this standard form would help facilitate the FAA's safety review process, allowing for greater efficiency in evaluating an applicant's ground safety analysis.

C. Part 417—Launch Safety, Subpart A, General

Proposed part 417, subpart A contains general requirements applicable to launch safety. Requirements for preparing a license application to conduct a launch, including related policy and safety reviews, are contained in parts 413 and 415. Because the provisions of part 417 would apply to prospective and licensed launch operators, an applicant seeking a license should read part 417 in conjunction with the application requirements of part 415, subpart F, and the general application requirements of part 413. Review of subpart F of part 415 will show that the subpart refers an applicant to the requirements proposed in part 417 on numerous occasions for purposes of the applicant demonstrating its ability to satisfy the requirements of part 417. Section 417.1 describes the scope of the requirements in part 417. Part 417 would prescribe the responsibilities of a launch operator conducting a licensed launch of an expandable launch vehicle and the requirements that a licensed launch operator must comply with to maintain a license and launch an expendable launch vehicle.

Section 417.3 contains definitions of terms used in proposed part 417.

Proposed § 417.5 would require that a launch operator ensure the safe conduct of a licensed launch. This section proposes that a launch operator ensure that members of the public and property belonging to the public are protected at all times during the conduct of a licensed launch, including preflight operations at a launch site and the flight of a launch vehicle.

Proposed § 417.7 would require a launch operator to ensure the safe conduct of launch processing at a launch site in the United States. A launch operator should anticipate that launch processing at a launch site outside the United States might be subject to the requirements of the governing jurisdiction. Requirements that apply to a launch site operator are contained in part 420. A launch operator would coordinate and perform launch processing in accordance with any agreements necessary to ensure that the responsibilities and requirements of this part and part 420 are met. Where there is a licensed launch site operator, a launch operator licensee would ensure that its operations are conducted according to any agreements that the launch site operator has with any local authorities. For example, under part 420, a launch site operator must obtain agreements with the FAA's regional office for air traffic services, and, if appropriate, the U.S. Coast Guard, *see* 14 CFR 420.57, to ensure that notices to airmen and mariners are issued before a launch. The launch operator must follow the procedures established by those agreements. A licensed launch operator would coordinate with the launch site operator and provide any information on its activities and potential hazards necessary to determine how to protect any other launch operators and persons and their property at the launch site. For a launch that is conducted from an exclusive use site where there is no launch site operator, the launch operator licensee would be responsible for meeting the requirements of this part and the public safety requirements of part 420, such as coordinating with the U.S. Coast Guard and the FAA's regional office for air traffic services.

Proposed § 417.9 would require a launch operator to conduct each launch in accordance with the safety review document developed during the part 415 licensing process, and maintained and updated for each specific launch in accordance with the requirements of proposed part 417. The FAA proposes that any launch specific update to a launch operator's safety review document be submitted to the FAA before flight. A launch operator would be required to submit the launch specific updates required by this part and any required by any special terms of a license as identified during the license application and evaluation process. Any other change to the information in a licensee's safety review document would have to be submitted to the FAA as a request for a license modification before flight in accordance with § 415.73 and the license modification plan required by proposed § 415.119.

Proposed § 417.11 would require a launch operator, for each specific launch, to verify that all license related information submitted to the FAA reflected the current status of the licensee's systems and processes as implemented for the specific launch. For each launch, a launch operator would submit a signed written statement to the FAA that the launch would be conducted in accordance with the terms and condition of the launch license and FAA regulations. The launch operator would also state in writing that all required license related information was submitted to the FAA and that the information reflected the current status of the licensee's systems and processes as implemented for that launch. The launch operator would be required to submit this written statement to the FAA no later than ten days before the first planned flight attempt for each launch. The FAA evaluates each planned launch for compliance with the terms and conditions of the launch license and the regulations. The FAA would notify a launch operator of any licensing issue and coordinate with the launch operator to resolve any issue prior to flight. The proposed regulations would prohibit a launch operator from proceeding with the flight of a launch vehicle if there were any unresolved licensing issues.

Proposed § 417.11(e) would require a launch operator, for each licensed launch, to provide FAA with a console for monitoring the progress of the countdown and communication on all channels of the countdown communications network. The launch operator would be required to ensure that the FAA was polled over the communications network during the countdown to verify that the FAA had identified no issues related to the launch operator's license. Although the FAA will not be participating in the launch in an operational capacity, the FAA is proposing this requirement in order to ensure that if the FAA identifies any issues that all persons involved in the launch are aware of those requiring resolution prior to flight. The FAA's participation in the poll is not intended to provide any additional authorization to the launch operator, but merely to serve as a final opportunity to communicate any issues identified. The FAA's provision of a ''go'' or ready statement during a poll would not mean that issues could not be identified later. It would mean only that none had been identified at that time.

D. Part 417, Subpart B, Launch Safety Requirements

Proposed part 417, subpart B would contain launch safety requirements that apply to the launch of orbital and sub-orbital expendable launch vehicles. Section 417.101 would identify the scope of subpart B, which would provide an overview of the public safety issues that a launch operator's launch safety program would be required to address. For each public safety issue, subpart B would either provide the requirements in their entirety or would provide an overview of the requirements and reference other subparts, sections, or appendices that contain further detail.

Section 417.103 would contain requirements for a launch operator to maintain an organization that ensured public safety and ensured that the requirements of proposed part 417 were satisfied. This section would identify the management positions and organizational elements that a launch operator's organization would incorporate, and would require that each launch management position and organizational element have documented roles, duties, and authorities. These proposed requirements are based on the approach used at the federal launch ranges and reflect only the organization elements needed to implement the safety-related requirements in proposed part 417.

Proposed § 417.105 would require a launch operator to have a program for ensuring that its personnel have the necessary qualifications and certifications to perform safety critical tasks. Based on experience at the federal launch ranges, the use of qualified personnel who are certified to perform specific tasks is considered one of the most effective methods of ensuring the safety of launch operations. Section 417.105 would require a launch operator to identify and document the qualifications, including education, experience, and training, for each launch personnel position that oversees, performs, or supports a hazardous operation with the potential to impact public safety or who uses or maintains safety critical systems or equipment that protect the public. This section would also contain requirements for a launch operator's personnel certification/re-certification program to ensure that personnel possess the qualifications for their assigned tasks.

Proposed § 417.107 would contain general requirements for protecting the public from the hazards associated with the flight of a launch vehicle. Section 417.107(a) would contain requirements for employing a flight safety system that provides a means of control during flight for preventing a launch vehicle and any component, including any payload, from reaching any populated or other protected area in the event of a launch vehicle failure. Section 417.107(a) would also identify the conditions under which an unguided suborbital rocket may be flown with a wind weighting safety system and without a flight safety system and requirements for the potential use of an alternate flight safety system. Further discussion on the FAA's proposed flight safety system requirements, including the use of an alternate flight safety system is provided in paragraph III.F of this preamble.

Section 417.107(b) would contain the public risk criteria that each launch must satisfy. A launch operator would be required to demonstrate compliance with the public risk criteria through analysis and by establishing flight commit criteria that ensure that a launch will take place only if the public risk criteria are satisfied. A launch operator would be required to demonstrate that the risk level due to all hazards associated with the flight of a launch vehicle not exceed an expected average number of 0.00003 casualties per launch ($E_C \leq 30 \times 10^{-6}$), excluding water-borne vessels and aircraft. The FAA is proposing to codify the applicability of this criterion to all licensed launches, regardless of the launch site. A launch operator's determination of E_C for a launch shall account for, but need not be limited to, risk due to impacting debris and any risk determined for toxic release and distant focus overpressure blast. The risk to the public from launch of an expendable launch vehicle is typically due to three major hazards. Further discussion on the requirements for determining expected casualty is provided in paragraph III.E.8 of this preamble.

Compliance with the E_C criteria of 30×10^{-6} is a widely accepted approach for measuring and controlling the risk to the general public from launch activities and has been used successfully at the federal launch ranges. Experience at the federal launch ranges and a review of current and proposed commercial launch sites indicate there are possible situations where the E_C calculated for a specific launch could be at an acceptable level, but the risk to one or more individuals may be unacceptably high. Through this rulemaking the FAA proposes that in conjunction with demonstrating $E_C \leq 30 \times 10^{-6}$ for each launch, a launch operator also demonstrate that the casualty probability for any individual (P_C) does not exceed 0.000001 per launch ($P_C \leq 1 \times 10^{-6}$). This P_C criteria has been used successfully by some federal launch ranges and is based on statistical studies of the levels of involuntary risk that people are exposed to in every day life. The general logic being applied is that an individual member of the public, someone who is not involved with the launch of a launch vehicle, should not be exposed to any risk greater than the individual would otherwise be subjected to as part of a normal day. A launch operator would be required to establish an individual casualty contour according to proposed § 417.225 such that, if a single person were present inside that contour at the time of liftoff, the 1×10^{-6} criteria would be exceeded. The FAA would require an individual casualty contour to be treated as a safety clear zone and a launch operator would be required to ensure that no member of the public is present within the safety clear zone during the flight of a launch vehicle.

The FAA proposes to use the criteria for ship and aircraft hit probability used at federal launch ranges for creating ship and aircraft hazard areas. A launch operator would be required to demonstrate that the risk probability of a launch vehicle or debris impacting any individual water-borne vessel that is not operated in direct support of the launch does not exceed 0.00001 ($P_I \leq 1 \times 10^{-5}$). The FAA proposes that the risk probability of a launch vehicle or debris impacting any individual aircraft not operated in direct support of the launch shall not exceed 0.00000001 ($P_I \leq 1 \times 10^{-8}$). A launch operator would be required to establish ship and aircraft impact hazard areas according to proposed § 417.225 to ensure these criteria are satisfied. Section 417.107(c) would require a launch operator to ensure that a launch vehicle, any jettisoned components, and its payload do not pass closer than 200 kilometers to a habitable orbital object throughout a sub-orbital launch. For an orbital launch, a launch operator would be required to ensure that a launch vehicle, any jettisoned components, and its payload do not pass closer than 200 kilometers to a habitable orbiting object during ascent to initial orbital insertion through at least one complete orbit. The FAA would require a launch operator to obtain a conjunction on launch assessment from United States Space Command according to proposed § 417.233 and to use the results to develop flight commit criteria that ensure the 200-kilometer criteria is satisfied. The flight commit criteria would typically identify specific periods of time (waits) during a launch window where flight must not be initiated. The FAA is in discussions with United States Space Command regarding a process for commercial launch operators to obtain a Conjunction On Launch Assessment (COLA). There may be other methods of obtaining this analysis; however, United States Space Command is the primary source of the most current data on orbital objects and must perform this analysis as part of its mission to protect national assets on orbit. The FAA proposes to require that a COLA be performed to protect habitable orbital objects such as the space shuttle and the international space station as is the current practice at the federal launch ranges. A launch operator may request COLA results for other orbital objects as desired for mission assurance purposes.

Section 417.107(d) would require a launch operator to perform and document a flight safety analysis according to subpart C of proposed part 417. The analysis must demonstrate compliance with the public risk criteria specified in paragraph (b) of proposed § 417.107 and establish flight safety limits for each launch. A launch operator would be required to use the analysis products to develop launch safety rules, including flight commit and flight termination criteria, to ensure that the public risk criteria are met. Further discussion on the proposed flight safety analysis requirements is provided in section III.E of this preamble.

Section 417.107(e) would require that the launch of any radionuclide be approved by the FAA as part of the launch licensing process according to proposed § 415.115 or a launch operator would be required to apply for a license modification. The launch of any radionuclide involves special safety considerations as well as possible coordination with other government agencies that may have jurisdiction. FAA safety review and approval of a launch involving any radionuclide would be handled on a case-by-case basis. For each launch, a launch operator would be required to verify that the type and quantity of any radionuclide on a launch vehicle or payload is in accordance with the terms of its launch license.

Section 417.107(f) would require a launch operator to implement a flight safety plan prepared as required during the license application process according to proposed § 415.115 and in accordance with the launch plan requirements in proposed § 417.111. Specific requirements applicable to a flight safety plan for the launch of an unguided suborbital launch vehicle are provided in proposed § 417.125.

Proposed § 417.109 would require a launch operator to perform a ground safety analysis and implement a ground safety plan to protect the public from adverse affects of operations associated with preparing a launch vehicle for flight at a launch site in the United States. Specific ground safety requirements that must be met by a launch operator would be provided in proposed subpart E of proposed part 417. Further discussion on the proposed ground safety requirements is provided in section III.G of this discussion.

Proposed § 417.111 would contain requirements for a launch operator to update, maintain, and implement its launch plans developed during the licensing process according to proposed § 415.117. The FAA's approach to developing regulatory requirements is for the requirements to be performance oriented wherever possible, thereby allowing for any innovation that a launch operator may develop for its operations, provided the innovation accomplishes the related performance requirement. A launch operator's launch plans would document the launch operator's approach for compliance with the performance requirements. Each plan would become part of the terms of the license and the FAA would inspect a licensee for compliance with the license's launch plans.

Proposed § 417.113 would contain requirements for written launch safety rules that govern launch. The launch safety rules would identify the environmental conditions and status of the launch vehicle, launch support equipment, and personnel under which launch operations may be conducted without adversely affecting public safety. Launch rules would address flight and ground safety issues and would be documented in a launch operator's launch plans. The flight and ground safety analyses that would be required by proposed subparts C and E of part 417 would be used to establish many of a launch operator's launch safety rules. Section 417.113 would also contain specific requirements for flight commit criteria, flight termination criteria, and launch crew work shift and rest rules.

Proposed § 417.115 would contain requirements for testing all flight and ground systems and equipment that protect the public from the adverse effects of a launch. A launch operator would be required to determine the cause of any discrepancy identified during testing, develop and implement any correction, and perform re-testing to verify each correction. A launch operator would be required to notify the FAA of any discrepancy identified during testing and submit information on corrections implemented and the results of re-testing before the system or equipment would be used in support of a launch. The configuration of safety critical systems may change from one flight to the next. Testing of safety critical systems in preparation for each launch in the configuration used for the launch is considered one of the most effective approaches for ensuring the reliability of the safety critical systems when needed during launch processing and flight.

Proposed § 417.117 would contain requirements for review meetings that a launch operator would be required conduct to determine the status of launch operations, systems, equipment, and personnel and their readiness to support launch and to review the results of a launch. This section would contain the general requirements that apply to all reviews and would identify the specific reviews that a launch operator must conduct for each launch. A launch operator would maintain documented criteria for successful completion of each review and document all review proceedings. Any corrective actions identified during a review would be documented and tracked to completion. Launch operator personnel who oversee a review would attest in writing to successful completion of the review. The series of reviews that would be required reflect a proven practice for ensuring safety issues are identified and resolved prior to launch based on the experience of the federal launch ranges.

Proposed § 417.119 would contain requirements for rehearsals designed to exercise all launch personnel and systems under nominal and non-nominal preflight and flight conditions and identify corrective actions or operational changes needed to ensure public safety. This section would contain general requirements that apply to all rehearsals and would identify the specific rehearsals that a launch operator would conduct for each launch.

A launch operator would develop and conduct the rehearsals identified in proposed § 417.119 for each launch unless otherwise approved by the FAA through the licensing process. For example, when conducting a series of launches within days of one another, a launch operator may propose that one rehearsal applies to more than one launch. The FAA would consider such a proposal if all the same personnel are involved in each launch and the launch operator demonstrates that an equivalent level of safety is achieved.

Proposed § 417.121 would contain requirements for the safety critical preflight operations that a launch operator would perform to ensure public safety. A safety critical preflight operation is an activity performed specifically to protect the public from any adverse effects of a launch vehicle's flight or from hazards associated with launch processing at a launch site, including activities such as disseminating notices of hazard areas and surveillance of hazard areas to ensure that flight commit criteria are satisfied. This section would contain general requirements that apply to all safety critical preflight operations and would contain requirements for specific safety critical preflight operations that a launch operator would conduct for each launch.

Proposed § 417.123 would require a launch operator to ensure that any flight and ground computing system that performs or potentially performs a software safety critical function is implemented in accordance with the requirements of appendix H of proposed part 417. A launch operator would identify any software safety critical functions, as defined by appendix H, associated with handling, pre-flight assembly, checkout, test, or flight of a launch vehicle including any computing systems and software that are part of a flight safety system. The proposed software safety approach is an adaptation of the approach that has been successfully implemented at the Air Force launch ranges and is one with which most current launch operators are familiar.

Proposed § 417.125 would contain requirements that apply specifically to the launch of an unguided suborbital rocket. The process of ensuring public safety for such a launch is typically completed prior to flight and involves setting the launcher azimuth and elevation (aiming the rocket) to correct for the effects of actual time of flight wind conditions to provide a safe impact location. This safety process, called wind weighting, has some unique organizational and operational requirements. Unlike the launch of a guided launch vehicle, an unguided suborbital rocket may be flown without a flight safety system that provides safety control during flight. This section would contain the specific requirements under which an unguided suborbital rocket may be flown with a wind weighting safety system and without a flight safety system.

Proposed § 417.127 would contain requirements for a launch operator to review operations, system designs, analysis, and testing, and identify and implement any additional policies and practices needed to protect the public. The FAA suggests that this include public safety related practices designed to ensure that there are no conflicts with the requirements of other Federal, State, and local regulations and to ensure that any necessary agreements and interfaces are in place. A launch operator is responsible for all aspects of public safety. As the launch industry continues to grow, advances in technology and implementation of innovations by launch operators will likely introduce new and unforeseen public safety issues. The FAA plans to work with launch operators on a case-by-case basis to resolve any public safety issues not specifically addressed by current regulations. A launch operator would be required to implement any unique safety policies and practices identified during the licensing process and documented in the launch operator's safety review document. For any new launch operator unique safety policy or practice or change to an existing safety policy or practice, the launch operator would be required to submit a request for license modification.

E. Part 417, Subpart C, Flight Safety Analysis

Proposed subpart C would contain the requirements governing a launch operator's performance of flight safety analysis to demonstrate a launch operator's capability to monitor and control risk to the public from normal and malfunctioning launches. Proposed section 417.201 would identify the scope of subpart C. A flight safety analysis consists of a number of analyses, which in some cases are dependent on one another. The sections of subpart C would contain performance standards for each of the analyses that make up an overall flight safety analysis. This subpart would also identify the analysis products that a launch operator would submit to the FAA when applying for a launch license and that would be submitted for each specific launch. Further discussion on the proposed flight safety analysis requirements is provided in section III.E of this preamble.

Proposed § 417.203 contains general requirements that apply to performing flight safety analysis, incorporating the analysis products into the launch operator's flight safety plan, and submitting analysis products to the FAA. The FAA anticipates that different launch operators will employ different methods for satisfying the requirements of proposed subpart C. In the course of the licensing process the FAA will review a launch operator's proposed method and determine whether it satisfies the FAA's requirements. Accordingly, a launch operator may not change its methods for conducting a flight safety analysis without FAA approval, and a launch operator would be required to submit any change to a launch operator's flight safety analysis methods to the FAA as a request for license modification before the launch for which it was performed.

Section 417.203 would require that a launch operator meet the requirements of proposed subpart C unless the FAA approves an alternate analysis during the license application process or as a license modification. The FAA would approve an alternate analysis if a launch operator provided a clear and convincing demonstration that its proposed analysis provided an equivalent level of safety to that required by proposed subpart C. A launch operator would have to obtain

FAA approval of an alternate flight safety analysis before its license application or application for license modification could be found sufficiently complete.

Proposed § 417.205 contains requirements governing a trajectory analysis that a launch operator would perform to define the limits of a launch vehicle's normal flight for any time after liftoff. Many of the other analyses, such those performed to establish flight safety limits and hazard areas, would use the products of the trajectory analysis as input.

Proposed § 417.207 contains requirements governing a malfunction turn analysis that a launch operator would perform to determine a launch vehicle's greatest turning capability as a function of trajectory time. A launch operator would use the products of its malfunction turn analysis as input to its flight safety limits analysis and other analyses where it is necessary to determine how far a launch vehicle's impact point can deviate from the nominal impact point ground trace if a malfunction occurs.

Proposed § 417.209 contains the requirements governing a debris analysis that a launch operator would perform to determine the inert, explosive, and otherwise hazardous launch vehicle debris resulting from a launch vehicle malfunction and from any planned impact of a jettisoned launch vehicle stage, component, or payload. A launch operator would develop debris models in the form of lists of the debris that is planned as part of a launch or that results from breakup of the launch vehicle. Each list would describe each debris piece produced, its physical characteristics, whether it is inert, explosive or otherwise hazardous, and the effects of impact, such as explosive overpressure, skip, splatter, or bounce radius, including its effective casualty area.

A launch operator would use the products of its debris analysis as input to other flight safety analyses such as those performed to establish flight safety limits and hazard areas and to determine if the launch satisfies the public risk criteria.

Proposed § 417.211 contains requirements governing the analysis that a launch operator would perform to determine the geographic placement of flight control lines that define the region over which a launch vehicle will be allowed to fly and any debris resulting from normal flight and any launch vehicle malfunction, will be allowed to impact. As part of a flight control lines analysis, a launch operator would identify the boundaries of populated and other areas requiring protection from potential adverse effects of a launch vehicle's flight. A launch operator would ensure that the flight control lines bound all such protected areas. A launch operator would use the flight control lines to establish flight termination rules used in conjunction with a flight safety system to ensure that the debris associated with a malfunctioning launch vehicle does not impact any populated or other protected area outside the flight control lines. Proposed § 417.213 would contain requirements governing a flight safety limits analysis that a launch operator would perform to establish criteria for terminating a malfunctioning launch vehicle's flight. These flight termination criteria used in conjunction with a flight safety system would ensure that the launch vehicle's three-sigma debris impact dispersion, including the effects of any explosive debris, did not extend beyond the flight control lines established according to proposed § 417.211. A launch operator's flight safety limits analysis would determine a set of temporal and geometric extents of a launch vehicle's debris impact dispersion on the Earth's surface resulting from any planned debris impacts and potential debris impacts resulting from launch vehicle failure. A launch operator's flight safety limits would provide for the identification of a launch vehicle malfunction with sufficient time to terminate flight to prevent the adverse effects of the resulting debris from reaching any protected area outside the flight control lines.

Proposed § 417.215 would contain requirements governing a straight-up time analysis that a launch operator would perform to determine the latest time-after-liftoff by which flight termination would be initiated in the event of a launch vehicle malfunction resulting in the launch vehicle flying a vertical or near vertical trajectory, referred to as a straight-up trajectory, rather than following a normal trajectory downrange. Straight-up time is a special type of flight safety limit used to address this specific type of failure. In the event of such a failure, the launch operator would terminate flight at the straight-up time to ensure that debris or critical over-pressure does not extend outside the flight control lines in the launch area.

Proposed § 417.217 contains requirements governing a wind analysis that a launch operator would perform to determine wind magnitude and direction as a function of altitude for the air space through which its launch vehicle will fly and for the airspace through which jettisoned debris will travel. The products of this analysis would have to satisfy the input requirements of the other flight safety analyses that are dependent on wind data. Additional wind analysis requirements for the launch of an unguided suborbital rocket using a wind weighting safety system would be contained in proposed § 417.235 and appendix C of part 417.

Proposed § 417.219 contains requirements governing a no-longer terminate gate analysis that a launch operator would perform to determine the portion, referred to as a gate, of a flight control line or other flight safety limit boundary, through which a launch vehicle's tracking icon is allowed to proceed without a launch operator being required to terminate flight. A tracking icon is the representation of a launch vehicle's position in flight available to a flight safety official during real-time tracking of the launch vehicle's flight. A launch operator would be permitted to employ a gate for planned launch vehicle flight over a populated or other protected area only if the launch could be accomplished while meeting the public risk criteria of proposed § 417.107.

Proposed § 417.221 contains requirements governing a data loss flight time analysis that a launch operator would perform to determine the shortest elapsed thrusting time during which a launch vehicle can move from a state where it does not endanger any populated or other protected area to a state where endangerment is possible. A data loss flight time analysis would also determine the earliest destruct time, which is the earliest time after liftoff that public endangerment is possible, and the no longer endanger time, which is the earliest time after liftoff that public endangerment is no longer possible. A launch operator would employ data loss flight times following any malfunction that prevents the flight safety official from knowing the location or behavior of a launch vehicle. A launch operator would be required to incorporate data loss flight times into the flight termination rules for each launch.

Proposed § 417.223 contains requirements governing a time delay analysis that a launch operator would perform to determine the mean elapsed time between the start of a launch vehicle malfunction and the final commanded flight termination, including the flight safety official's decision and reaction time. A launch operator would also determine the time delay plus and minus three-sigma values relative to the mean time delay.

A time delay analysis would account for data flow decelerations, decision time, and reaction time due to hardware, software, and personnel that comprise a launch operator's flight safety system and would be used to establish flights safety limits.

Proposed § 417.225 contains requirements governing a flight hazard area analysis that a launch operator would perform to determine the regions of land, sea, and air that must be publicized, monitored, controlled, or evacuated to protect the public from the adverse effects and hazards of planned and unplanned launch vehicle flight events and to ensure that the public risk criteria in proposed § 417.107(b) are satisfied. A launch operator's flight hazard area analysis would define the ship and aircraft hazard areas for which Notices to Mariners (NOTMAR) and Notices to Airman (NOTAM) must be issued and the areas where the launch operator would survey prior to flight. The products of a launch operator's flight hazard area analyses would be used to establish launch safety rules. Typically, these rules would preclude liftoff if the public would be exposed within a flight hazard area or if the extent of public presence would exceed the public risk criteria of proposed § 417.107(b).

Proposed § 417.227 contains requirements governing a debris risk analysis that a launch operator would perform to determine the expected average number of casualties (E_C) to the collective members of the public exposed to inert and explosive debris hazards from any one launch. This analysis would include an evaluation of risk to populations on land, including regions of launch vehicle flight following passage through any gate in a flight safety limit boundary established according to proposed § 417.219. The requirements in proposed § 417.227 apply to a debris risk analysis for all launches. A launch operator would perform a debris risk analysis using the methodology provided in appendix B of proposed part 417. This analysis would be part of the launch operator's demonstration of compliance with the overall (E_C) criteria of 30×10^{-6}.

Proposed § 417.229 contains requirements governing a toxic release analysis that a launch operator would perform to determine any potential public hazard resulting from any potential toxic release during preflight processing and flight of a launch vehicle and to develop launch safety rules, including flight commit criteria to protect the public from any potential toxic release. A launch operator would perform a toxic release analysis using the methodology contained in appendix I of proposed part 417.

Proposed § 417.231 contains requirements governing a distant focus overpressure blast effects analysis that a launch operator would perform to demonstrate that the potential public hazard resulting from impacting explosive debris would not cause windows to break with related injuries. In order to satisfy the requirements of this section, a launch operator would be required to evaluate potential distant focus overpressure blast effects hazards in accordance with a multi-level screening approach, in which the launch operator would employ either a deterministic analysis or a probabilistic analysis, to prevent casualties that could arise due to potential distant focus overpressure blast.

Proposed § 417.233 contains requirements governing the performance of a conjunction on launch assessment that a launch operator would obtain from United States Space Command. A launch operator would implement any waits in the launch window, as identified by United States Space Command, during which flight must not be initiated in order to maintain a 200-kilometer separation from any habitable orbiting object. A licensee may request a conjunction on launch assessment be performed for other orbital objects to meet mission needs or to accommodate other satellite owners or operators.

Proposed § 417.235 contains requirements governing flight safety analysis for the launch of an unguided suborbital rocket that is flown with a wind weighting safety system and without a flight safety system. A launch operator would demonstrate that any adverse effects resulting from flight would be contained within controlled operational areas and any flight hardware or payload impacts would occur within planned impact areas. The launch operator would also demonstrate compliance with the public risk criteria. A launch operator would perform the analyses using the methodologies contained in appendixes B and C of proposed part 417.

F. Part 417, Subpart D, Flight Safety System

Subpart D would contain requirements applicable to a launch operator's flight safety system, the primary purpose of which is to prevent a launch vehicle from impacting populated or other protected areas in the event of a launch vehicle failure.

Proposed § 417.301 contains general requirements applicable to any type of flight safety system including any that may differ from the human operated system traditionally used in the United States. A launch operator would ensure that a flight safety system satisfies all the requirements of subpart D unless the FAA approves the use of an alternate flight safety system in accordance with proposed § 417.107(a). The FAA will evaluate any alternate flight safety system on a case-by-case basis.

An example of a flight safety system for which all of the requirements in subpart D do not apply is the thrust termination system employed by Russian and Ukrainian launch vehicles. The FAA has licensed Sea Launch launches, which use such a thrust termination system. The Sea Launch licensing determination was made based on a clear understanding of how the thrust termination system compares with the requirements in proposed subpart D. With that and a review of all safety related issues and the specifics of each launch of Sea Launch, including the remote isolation of the launch site, the FAA determined that an acceptable level of public safety was being provided that was equivalent to a commercial launch from a United States federal launch range. (Further discussion on the issue of using an alternate flight safety system that does not meet all the requirements of subpart D of proposed part 417 is provided in section III.F.7 of this discussion.) The requirements in proposed subpart D are based on the use of a human operated system where flight termination is initiated by radio command. When evaluating an alternate flight safety system, the FAA will use the requirements in subpart D as guidelines, where applicable, for which the launch operator must demonstrate an equivalent level of safety.

A launch operator's flight safety system would consist of a flight termination system, a command control system, and the support systems defined in this subpart, including all associated hardware and software. A flight safety system would also include the functions of any personnel who operate flight safety system hardware and software. A launch operator would be required to satisfy each requirement in this subpart, including all requirements contained in referenced appendices, by meeting the requirement or by employing an alternate method approved by the FAA through the licensing process. The FAA will approve an alternate method if a launch operator provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by subpart D. A launch operator would have to obtain FAA approval of any proposed alternate method before its license application or application for license modification could be found sufficiently complete.

A launch operator would implement a test program for its flight safety system that demonstrates the ability of flight safety system components to meet the design margins and reliability requirements of proposed subpart D.

Any change to a licensee's flight safety system design or flight safety system test program that was not coordinated during the licensing process would be submitted to the FAA for approval as a license modification prior to flight. The modification requirement of § 415.73 is of special significance in the context of a flight safety system. Each requirement of proposed subpart D is designed to ensure that a launch takes place with a reliable and functioning flight safety system. A licensee must obtain FAA approval through the license modification process before implementing any changes. This includes any changes that may occur shortly before flight itself. The FAA's proposed license application timetable for submitting complete flight safety system design data and test program described in proposed §§ 415.127 and 417.129 respectively is intended to reduce the number of last minute changes and consequent delays.[16]

Prior to the flight of each launch vehicle, a licensee would confirm to the FAA in writing that its flight safety system is as described in its license application, including all applicable application amendments and license modifications, and complies with any terms of the license and the requirements of proposed part 417. Upon review of a proposed launch, the FAA may identify and impose additional requirements needed to address unique issues presented by a flight safety system, including its design, operational environments, and testing.

Proposed § 417.303 contains functional requirements for a flight termination system. A flight termination system is a major part of a flight safety system and consists of the hardware and software onboard a launch vehicle that accomplish the termination of flight in the event of a launch vehicle failure. Proposed § 417.303 would identify the functions that a flight termination system must accomplish to stop the flight of a launch vehicle and disperse hazardous energy in a way that protects public safety. Once initiated, a flight termination system would render each stage and any other propulsion system, including any propulsion system that is part of a payload, with the capability of reaching a populated or other protected area, non-propulsive and any stage or propulsion system not thrusting at the time the flight termination system is initiated would be rendered incapable of becoming propulsive. Rendering each stage and propulsion system non-propulsive would ensure that the impact location of the launch vehicle pieces could be accurately predicted and allows for the development of flight termination criteria that would prevent the launch vehicle, any component, or payload from impacting populated or other protected areas. A flight termination system would cause rapid dispersion of any liquid propellant by rupturing the propellant tank or other equivalent method and initiate burning of any toxic liquid propellant. The release of a toxic propellant like hydrazine could pose a significant risk to public safety. The proposed requirement would ensure that the concentrations of any liquid propellants are reduced to non-hazardous levels as quickly as possible and thereby minimize the risk of a toxic cloud reaching a populated or other protected area.

A flight termination system would include a command destruct system that is initiated by radio command. Use of a radio command destruct system is the proven method for ensuring public safety from a malfunctioning launch vehicle that has been used at United Stated launch ranges for over 40 years. The FAA will evaluate the use of any other type of system in place of a command destruct system, such as an autonomous flight termination system, on a case-by-case basis. In such a case, the launch operator would be required to provide a clear and convincing demonstration that its proposed method provided an equivalent level of safety.

A flight termination system would provide for flight termination of any inadvertently or prematurely separated stage or strap-on motor capable of reaching a populated or other protected area before orbital insertion. Some rocket stages, primarily strap-on solid rocket motors, may be capable of continued flight after becoming separated from the main launch vehicle if their propellant is not exhausted and continues to burn or begins to burn and produce thrust. Each stage or strap-on motor that does not possess its own complete command destruct system must be equipped with an inadvertent separation destruct system. An inadvertent separation destruct system would be considered a part of the overall flight termination system. The commonly employed inadvertent separation destruct system, frequently referred to as an ISDS, responds to a launch vehicle breaking up on its own and does not respond to guidance errors. An inadvertent separation destruct system is intended to ensure that the flight of any stage or booster that becomes separated from the main vehicle would be terminated.

Proposed section 417.305 contains requirements that a flight termination system must satisfy to ensure that it is capable of accomplishing the functional requirements contained in proposed section 417.303 with a high level of reliability. The FAA is proposing that a flight termination system have a reliability design of 0.999, which would be demonstrated through analysis. Historically, the federal launch ranges have mandated that a flight termination system have a design ''goal'' of 0.999 at a 95% confidence level. The FAA recognizes that flight termination systems are not tested several thousand times to prove the 95% confidence level because of the costs and the difficulty in trying to test the complete system. Instead, the federal launch ranges have relied on specific component test requirements with a strong heritage of success behind them to provide an acceptable level of confidence in the design and manufacture of a flight termination system's components. The federal launch ranges also rely on a series of system tests performed after flight termination system installation on the launch vehicle to ensure the integrity of the system as installed. Accordingly, the FAA's proposed reliability design requirement is directed at ascertaining whether a launch operator's flight termination system employs reliable components, and whether they are assembled to enhance reliability of the system. In order to achieve a reliability design of 0.999, a flight termination system's design is expected to incorporate high quality, highly reliable parts that are assembled using redundancy and other system reliability design approaches. A launch operator would prepare the system analyses required by proposed § 417.329 to demonstrate through analysis the reliability design of its

[16] Section 70107 of ch. 701 provides that a licensee may apply for a modification to its license. 49 U.S.C. § 70107. Section 70105 provides that a person may apply for a license or its transfer, and imposes a time limit of 180 days on the FAA on issuing or transferring a license. It does not impose a corresponding time limit on license modifications. It does not thus appear that the FAA is burdened by the same time constraints as a licensee facing an imminent launch if that licensee wishes to effectuate a change. However, the FAA will, as a matter of policy, treat 180 days as an internal goal by which to complete its review.

flight termination system. A launch operator would demonstrate confidence in a flight termination system by performing specific component and system testing adapted from the approach used at the federal ranges. Proposed § 417.303 also contains requirements for redundancy of flight termination system components and system independence and physical separation from other launch vehicle systems. Requirements for specific components, piece parts, and software would be contained in appendixes D, F, and H respectively.

Proposed § 417.307 contains requirements for ensuring that a flight termination system would function when subjected to flight and other environments. A flight termination system must function under conditions that would exist after other systems on the launch vehicle have failed. The design of a flight termination system and its components, including all mounting hardware, cables and wires, would provide for the system and each component to function without degradation in performance when subjected to dynamic environments greater than those it is expected to experience during environmental stress screening tests, ground transportation, storage, launch processing, system checkout, and flight up to the point that the launch vehicle could no longer impact any populated or other protected area or to the point that any combination of environments would cause structural breakup of the launch vehicle. For example, the most extreme thermal environment might occur while a vehicle is still in the atmosphere, but structural break up might produce the most extreme vibration environment.

Proposed § 417.307 would identify required design environments with which launch operators conducting launches at federal launch ranges are already familiar. The FAA proposes to adopt these federal launch range requirements because they represent proven environmental design safety factors intended to ensure that a system can withstand the environments to which it will be exposed without degradation in performance.

A launch operator would establish the maximum predicted environments for the operating and non-operating environments that a flight termination system is to experience based on analysis, modeling, testing, or flight data. Proposed § 417.307 would identify the specific environments that apply to the design of a flight termination system. The federal launch ranges historically have obtained information regarding each of the enumerated environmental factors because of the ability of those factors to affect the performance and reliability of a flight termination system and its components. For the same reasons, the FAA is proposing to codify these requirements as part of its proposed regulations.

A launch operator would verify its maximum predicted environments through monitoring and ensure that the maximum predicted environments for future launches are adjusted as needed based on the flight data obtained via monitoring. The FAA is also proposing the federal launch ranges' safety margins be added to maximum predicted environments obtained through analysis for launch vehicles that cannot yet provide at least three samples of flight data. A launch operator would ensure that transportation, storage, launch processing, and system checkout environments are monitored and the associated maximum predicted environments are adjusted as needed. A launch operator would be required to notify the FAA of any change to a maximum predicted environment because any change may indicate the need for a change in the design of a flight termination system or component.

Proposed § 417.309 contains requirements applicable to a command destruct system, which is a critical part of a flight termination system. A flight termination system would include at least one command destruct system that is initiated by radio command and meets the redundancy and other component requirements provided in proposed appendix D of proposed part 417. The initiation of a command destruct system by the flight safety official would result in accomplishing all flight termination functions required by proposed section 417.303. A command destruct system would process a valid arm command as a prerequisite for destroying the launch vehicle. For any liquid propellant, when the arm command is received, the command destruct system would nondestructively shut down any thrusting liquid engine as a prerequisite for destroying the launch vehicle. This capability provides a flight safety official with additional options in controlling the termination of a launch vehicle's flight. There are possible situations where it would be desirable to terminate the thrust of a malfunctioning launch vehicle but allow it to continue to fly a ballistic path for a period of time to move away from a populated or other protected area before destroying the launch vehicle. It is also possible to reduce the size of the debris footprint by terminating the thrust of a launch vehicle that is at a high altitude and allow it to fall to a lower altitude before destroying the launch vehicle.

Proposed § 417.311 contains requirements for an inadvertent separation destruct system (ISDS). Each stage or strap-on motor, capable of reaching a populated or other protected area, that does not possess its own complete command destruct system would be equipped with an inadvertent separation destruct system. An inadvertent separation destruct system may be required on a stage that has a command destruct system depending on the command destruct system's ability to survive breakup of the launch vehicle. Initiation of an inadvertent separation destruct system would result in accomplishing all flight termination system functions that apply to the stage or strap on motor on which it is installed in accordance with proposed § 417.303.

Proposed § 417.313 contains requirements governing the safing and arming of a flight termination system. Safing a flight termination system typically involves placing a mechanical barrier or other means of interrupting power between each of the ordnance firing circuits and its power source. Safing places the system's firing circuits in a state that prevents initiation of the system's ordnance. Arming a flight termination system removes any firing circuit barriers or other means of safing the system and places the firing circuits in a state from which the system's ordnance can be initiated if commanded. The ability to safe and arm a flight termination system prevents any inadvertent initiation of any flight termination system ordnance while allowing a flight termination system to function in case destruction of the launch vehicle is required. Although many of the immediately apparent benefits of safing a flight termination system accrue to the protection of workers, a safe and arm system also prevents inadvertent initiation of a flight termination system that could result in consequences propagating to the public. Safing and arming of flight termination system ordnance would be accomplished through the use of ordnance initiation devices or arming devices, also referred to as safe and arm devices, that provide a removable and replaceable mechanical barrier or other means of interrupting power to each of the ordnance firing circuits.

Proposed § 417.315 contains requirements for testing of a flight termination system and its components and documenting the results. A flight termination system's components would be subjected to a comprehensive test program patterned after the approach developed at the federal launch ranges over many years of experience. This approach provides for demonstrating the reliability of flight termination system components and establishing an appropriate confidence level. The FAA worked extensively with Air Force flight termination system experts to refine the federal range testing requirements and develop the proposed regulatory requirements. A launch operator would employ flight termination system components that are tested in accordance with the qualification, acceptance, and age surveillance test requirements contained in proposed appendix E of part 417 as well as the preflight test requirements provided in proposed § 417.317.

Proposed § 417.317 contains requirements for preflight testing performed at the component level and the system level to be conducted at the launch site after qualification and acceptance testing to detect any change in performance that may have resulted from shipping, storage, or other environments that may have affected performance. Proposed § 417.317 also contains preflight test requirements for specific flight termination components, such as batteries, safe and arm devices, and command destruct receivers. All the preflight component test requirements being proposed by the FAA were developed in direct coordination with the Air Force based on the experience of range safety personnel in ensuring flight termination system reliability. The performance of some flight termination system components may degrade over time as they are exposed to various environments after installation on a launch vehicle. Proposed § 417.317 contains requirements that address at what point before flight such components would be required to undergo preflight tests, and also contains requirements for retesting if launch is delayed or if a subsystem or system is compromised due to a configuration change or other event such as a lightning strike or inadvertent connector mate or de-mate.

Proposed § 417.319 contains requirements for written flight termination system installation procedures. Installation procedures serve two purposes. They ensure the correct installation of flight termination system components so that the system will work as intended. They also serve the corollary purpose of addressing worker safety issues. Although, as discussed previously, the FAA has no current plans to duplicate OSHA's role in the area of worker safety, it nonetheless bears mentioning that, in establishing such procedures, a licensee may likely respond to worker safety requirements and concerns as well. The FAA proposes that a launch operator implement written procedures to ensure that flight termination system components, including electrical components and ordnance, are installed on a launch vehicle in accordance with the flight termination system design and that the installation of all mechanical interfaces associated with a flight termination system is complete.

Proposed § 417.321 contains requirements for monitoring critical flight termination system parameters to ensure that the status of a flight termination system can be ascertained and relayed to the appropriate launch operator personnel. The FAA would require that a launch operator establish pass/fail criteria for monitored flight termination system data to support launch abort decisions and to ensure a flight termination system is performing as expected.

Proposed § 417.323 contains requirements for a command control system which consists of the flight safety system elements that ensure that a command signal will reach a flight termination system on a launch vehicle during flight. A command control system includes all flight termination system activation switches at the flight safety official console, all intermediate equipment, linkages, and software and any auxiliary stations, and each command transmitting antenna. In short, it consists of the flight safety system components that are typically located on the ground; however, there are command control system concepts that involve air, sea, or even space borne elements. Section 417.323 would contain requirements for a command control system to be compatible with the flight termination system onboard the launch vehicle. For example, when a launch vehicle's onboard flight termination system is active and its ordnance is electrically connected, a command control system's transmitter must radiate at the proper frequency to capture the receivers on the flight termination system. Section 417.323 would also contain requirements for the reliability of a command control system, requirements for specific subsystems such as the transmitter and antenna, and general requirements for the system's performance.

Of particular interest is the requirement proposed in § 417.323(e)(5)(vi), namely, that a transmitter must operate at a radio carrier frequency authorized for the launch operator's use. Traditionally, licensed launches that take place at federal launch ranges have had access to government frequencies between 400–450 MHz because those frequencies are available to the federal launch ranges. As a result, flight safety system components, including command control system transmitters and receiver decoders, are often manufactured to operate on the available government frequencies. A launch that takes place at a non-federal launch site may or may not have access to those same frequencies. The FAA considered requiring that a launch operator always use the government frequencies for its flight safety system, but the FAA does not have authority to allocate spectrum or to authorize its use. The Federal Communications Commission (FCC) licenses and regulates commercial spectrum. A launch operator is likely to have to seek authorization from the FCC should it choose or need to use other frequencies for its flight safety system. Additionally, in the interests of permitting innovation, the FAA does not seek to foreclose the use of other frequencies.

Proposed § 417.325 contains test requirements for a command control system. The test requirements are not as demanding as for the airborne flight termination system because the command control system is not subjected to the rigors of a flight environment. Accordingly, the federal launch ranges do not require qualification testing to the environments required for flight units, and the FAA does not propose to expand upon the range requirements in this instance. Section 417.325 would contain requirements for a command control system, its subsystems, and components, to be subjected to acceptance and preflight tests and would provide general requirements that apply to all command control system testing, including requirements for documenting test results.

Proposed § 417.327 contains requirements for the additional subsystems that are part of an overall flight safety system. These subsystems are referred to as support systems because they support the flight safety official's ability to make a flight termination decision. Support systems would include vehicle tracking, visual data source, telemetry, communications, data display and data recording systems, the flight safety official console, and the launch timing system. Section 417.327 would require these support systems to be compatible with each other and would contain requirements applicable to each specific support system. Section 417.327 would also contain requirements for support equipment calibration and a destruct initiator simulator that a launch operator would use when performing preflight tests of the flight termination system.

Of particular interest are the proposed requirements for a launch vehicle tracking system that provides continuous vehicle position and status data to the flight safety official from lift-off until the launch vehicle reaches orbit or can no longer reach any populated or other protected area. The FAA proposes launch vehicle tracking requirements for two, independent data sources, where at least one source is independent of any system used to aid the launch vehicle guidance system. Historically, the federal launch ranges have required three sources of tracking data regarding a vehicle's location, including telemetry and two additional independent sources for verification and back up. It is the FAA's understanding that the ranges require the second independent system for reasons of mission assurance and to avoid destroying what might have proven to be a normally functioning vehicle had additional tracking data been available to establish the fact. The FAA proposes to require one independent system to verify the accuracy of the launch vehicle's own telemetry. In light of the requirements proposed in § 417.113, which would require destruction of a vehicle when a launch operator loses tracking data, a launch operator may choose to follow the federal range practice of employing two independent tracking systems for the purpose of mission assurance. The FAA does not envision entertaining waiver requests for this requirement.

An independent tracking system would include a vehicle tracking aid onboard the launch vehicle, and compatible ground tracking system and onboard tracking system components. Onboard tracking system components, such as beacon transponders and GPS translators and their components must be independent of any system used to support the launch vehicle's inertial guidance system. Onboard tracking components that are not directly associated with determining or measuring vehicle position and performance constitute an exception to the requirement for independence. Examples of components that may be used by the vehicle telemetry system but that are not directly associated with determining or measuring vehicle position and performance include S-band down link antennas, transmitters, and associated cabling and power dividers.

When a flight safety system employs radar as an independent tracking source, the launch vehicle would be required to have a tracking beacon onboard the launch vehicle unless the launch operator provides a clear and convincing demonstration through the licensing process that any skin tracking maintains a tracking margin of no less than six dB above noise throughout the period of flight that the radar is used and that the flight control lines and flight limits account for the larger tracking errors associated with skin tracking. The proposed requirements for radar tracking follow current practice at the federal launch ranges for ensuring reliable and accurate radar tracking data.

The FAA weighed the possibility that a launch operator be permitted to use whatever secondary tracking source it desired, because proposed § 417.113's requirement to terminate flight in the event of a loss of telemetry would achieve the goal of keeping the launch vehicle from reaching the public. A number of reasons led the FAA to decide against such a proposal. As noted earlier, the federal launch ranges require three sources of vehicle tracking data: telemetry, radar, and backup radar. The FAA would require two sources, thereby reducing the tracking requirement at the start. Additionally, it is still important to have accurate tracking data because reliance on telemetry must be validated by some independent means, and because valid tracking data shows whether it is necessary to terminate flight. Finally, concerns over the unnecessary risks created by terminating flight also argue against permitting a less accurate means of tracking.

Proposed § 417.329 contains requirements for system analyses that a launch operator would perform to verify that a flight termination system, a command control system, and their components meet the reliability requirements of this proposed subpart. These analyses would be performed following standard industry system safety and reliability analysis methodologies. Guidelines for performing these analyses could be obtained through FAA Advisory Circular AC 431–01, a draft of which was made available April 21, 1999. Section 417.329 would contain requirements for the specific analyses and requirements for documenting the results.

Proposed § 417.331 contains requirements for a flight safety system crew and the roles and qualifications of crewmembers. A flight safety system would be operated by a flight safety crew made up of a flight safety official and support personnel. The flight safety crew positions and roles proposed by the FAA were developed based on the approach traditionally used at the federal launch ranges. Flight safety personnel who make up the flight safety crew are a critical link in the protection of the public from the hazards associated with launch, in particular assuring that a malfunctioning launch vehicle does not impact populated or other protected areas. Flight safety personnel are responsible for making instantaneous, irreversible, real time decisions that could affect the safety of public personnel and property. Highly qualified and skilled personnel must work as a team to operate a flight safety system in a highly efficient and reliable manner. The proposed standards for personnel qualifications and training would provide assurance that the personnel responsible for the flight safety system will meet the public safety related demands placed upon them.

The traditional approach to qualifying a flight safety crewmember at federal launch ranges primarily involves on-the-job-training. Candidates who possess an appropriate engineering and scientific education and technical experience may enter into an apprenticeship type of program under the cognizance of senior personnel who are responsible for training and evaluating performance. In the future, it may be possible for a launch operator to develop or obtain a formal flight safety training program. For example: NASA's Wallops Flight Facility has a flight safety official training curriculum developed for NASA's purposes and has, in the past, provided training for personnel outside of NASA. This type of training program might have to be tailored to meet a launch operator's specific needs and is expected to still involve a degree of hands on experience and evaluation to certify someone for a flight safety crew position. A person with previous federal range experience, who has successfully completed federal range training, and is certified to perform a flight safety function at a federal range, is likely to be qualified to perform that same function as a flight safety crew member for a launch from a non-federal launch site. Such crewmembers would still require training to familiarize them with the specific characteristics of the vehicle to be flown and the flight safety systems to be used for the launch. Initially, for launches from non-federal launch sites, the FAA appreciates that the flight safety crew positions would likely have to be filled by personnel with previous federal launch range experience or by personnel trained by the federal launch ranges. At this time, a federal launch range is the primary source for the necessary training and experience. This is expected to change over time as the commercial launch industry continues to mature and experience at non-federal launch sites increases.

G. Part 417, Subpart E, Ground Safety

Proposed subpart E of part 417 contains safety requirements for launch processing and post-launch activities, typically referred to as ground safety requirements. Proposed § 417.401 describes the scope of subpart E. The requirements in subpart E would apply to launch processing and post-launch activities at a launch site in the United States that were performed by, or on behalf of, a launch operator. Launch processing and post-launch activities at a launch site outside the United States may be subject to the requirements of the governing jurisdiction.

Proposed § 417.403 contains requirements for a launch operator to ensure that the hazard controls necessary to protect the public are in place. The launch operator would perform a ground safety analysis, implement a ground safety plan, and conduct launch processing according to any local agreements. For a launch that is conducted from a launch site exclusive to its own use, a launch operator would be required to satisfy the requirements of subpart E and applicable requirements of part 420, which contains requirements that would govern a launch site operator. A launch operator would keep its ground safety plan current and provide the FAA with any change no later than 30 days before that change is implemented. When a launch operator is following procedures approved through the grant of a launch license the FAA does not seek to be advised of the changes in order to approve them but so that the FAA, when performing an inspection, knows, for example, where a hazard area is located for a specific operation. However, any change that involves the addition of a hazard that could affect the public or the elimination of any previously identified hazard control for a hazard that still exists, shall be submitted to the FAA for approval as a license modification.

Proposed § 417.405 would contain requirements for a launch operator to perform a ground safety analysis for all its launch vehicle hardware and launch processing at a U.S. launch site to identify each potential public hazard, any and all associated causes, and any and all hazard controls that a launch operator will implement to keep each hazard from reaching the public. § 417.405 would also contain the qualification requirements for personnel who prepare a ground safety analysis, identification of specific types hazards that would be addressed, and requirements for analyzing specific types of hazards.

Proposed § 417.407 contains requirements governing implementation of hazard controls and inspections to ensure that hazard controls are in place and no unsafe conditions exist.

Proposed § 417.409 contains requirements for a launch operator's implementation of the system hazard controls it identified through its ground safety analysis. For example, the FAA proposes to require that any system that presents a public hazard must be single fault tolerant. Also, each hazard control used to provide fault tolerance would be required to be independent so that no single action or event can remove more than one inhibit. A single command signal must not close two switches, if the two switches provide single fault tolerance. Switches, valves and similar actuation devices must be prevented from inadvertent actuation. § 417.409 would contain specific hazard control requirements for structures and material handling, pressure vessels and pressurized systems, electrical and mechanical systems, propulsion systems, and ordnance systems.

Proposed § 417.411 contains requirements for the establishment and control of safety clear zones for hazardous operations. A safety clear zone would be an area within which any potential adverse effect of a launch location hazard or public hazard will be confined. A launch operator would prohibit access by the public to any safety clear zone during a hazardous operation.

Proposed § 417.413 contains requirements for establishing and controlling hazard areas for each hardware system that presents a potential public or launch location hazard within which any adverse effects would be confined should an actuation or other undesirable hazardous event occur.

Proposed § 417.415 contains requirements for hazard controls for protecting the public after a launch or an attempted launch. A launch operator would implement procedures for controlling hazards and returning the launch facility to a safe condition after a successful launch attempt and in the event of a failed launch attempt where a solid or liquid launch vehicle engine start command was sent, but the launch vehicle did not liftoff. These procedures would include provisions for ensuring a flight termination system remained operational until it was verified that the launch vehicle did not represent a risk of inadvertent liftoff, assuring that the vehicle was in a safe configuration that included its propulsion and ordnance systems, and prohibiting launch complex entry until a pad safing team has performed all necessary safing tasks.

A launch operator would also implement procedural controls for hazards associated with an unsuccessful launch attempt where the launch vehicle has a land or water impact. The launch operator would provide for extinguishing any fires, evacuation and rescue of personnel, modeling and tracking of any toxic plume and communication with local government authorities, and securing impact areas to ensure that all personnel are evacuated, that no unauthorized personnel enter, and to preserve evidence. A launch operator would also provide for recovery and salvage of launch vehicle debris to ensure public safety and the safe disposal of any hazardous materials.

Proposed § 417.417 contains specific ground safety requirements for handling propellants and explosives during launch processing. A launch operator would comply with the explosive safety criteria and the explosive site plan developed for the launch site in accordance with 14 CFR part 420. A launch operator would implement procedures for the receipt, storage, handling and disposal of explosives and would implement its emergency response plan for the control of hazards in the event of a mishap associated with any propellant or explosive. Section 417.417 would also contain specific requirements for procedural system controls to preclude inadvertent initiation of explosives and propellants. These controls would include protection from stray energy sources such as static electricity, lightning, heat, and sources of spark and flame.

H. Appendix A, Methodologies for Determining Flight Hazard Areas for Orbital Launch

Appendix A of proposed part 417 would provide methodologies and equations used in determining flight hazard areas as part of the flight hazard area analyses required by proposed § 417.225. The establishment of flight hazard areas depends on calculating the dispersions associated with impacting debris and performing hit-probability calculations and making comparisons to established hit-probability criteria, such as the individual probability of casualty of 1×10^{-6} and the ship-hit criterion of 1×10^{-5}. There may be numerous ways to perform the hit-probability calculations and to demonstrate meeting the established criteria. The methodologies in appendix A would provide a standard approach to which alternate methods could be compared and would assist in ensuring that the hit-probability criteria are implemented equally for all launches by all launch operators. The FAA proposes that a launch operator use the methodologies and equations provided in appendix A when performing the flight hazard area analyses unless, through the licensing process, the launch operator provides a clear and convincing demonstration that an alternative provides an equivalent level of safety.

With regards to the proposed requirements governing the creation of a specific hazard area, the FAA notes that a launch operator may anticipate that a hazard area established for one launch would likely apply to subsequent launches of the same vehicle on the same launch azimuth. A launch operator may demonstrate that earlier analyses applicable to launches with similar characteristics also may apply to later launches.

I. Part 417, Appendix B, Methodology for Performing Debris Risk Analysis

A launch operator shall use the equations and methodology contained in proposed appendix B when calculating expected casualty (E_C) due to debris as part of a debris risk analysis required by proposed §§ 417.227 and 417.235. The total E_C due to debris for a launch is calculated as the sum of the E_C due to planned debris impacts, the E_C due to potential launch vehicle failure during flight, which is referred to as overflight E_C, and any risk to populations due to potential failure of any flight termination system. A launch operator must include the E_C due to debris for a proposed launch when demonstrating that the launch does not exceed the overall E_C criterion of 30×10^{-6} for all hazards. As noted with regard to the flight hazard area analyses of appendix A, there may be numerous approaches to performing debris risk calculations as well. The methodology in appendix B would provide a standard approach to which alternate methods may be compared and would assist in ensuring that the debris risk overall E_C criterion is implemented equally for all launches by all launch operators. The FAA proposes that a launch operator use the methodology and equations provided in appendix B when performing the debris risk analysis unless through the licensing process, the launch operator provides a clear and convincing demonstration that another method or equation provides an equivalent level of safety. Further discussions on casualty due to debris and collective risk are contained in paragraphs III.E.8 and 9 of this preamble.

Of particular interest in appendix B is the proposed methodology for evaluating the risk to populations outside the flight control lines due to the potential failure of a flight safety system. Using the risk assessment tools employed by the Air Force, the FAA developed criteria for screening the populations in the areas surrounding a launch point and determining if further debris risk analysis would be necessary for a launch. The FAA's intent in developing the screening methodology was to simplify the analysis process for launches from relatively remote sites. For a launch that satisfied the screening criteria, a detailed risk analysis for populations outside the flight control lines would not be required.

When employing the screening criteria, a launch operator would divide the land areas around the launch point into sectors, determine the population in each sector, and compare those populations to the population limits established by the FAA for each sector. Proposed appendix B provides population limits for new and mature large launch vehicles and new and mature medium and small launch vehicles. The proposed population limits for a large launch vehicle were developed using computer models for a Titan 4. The computer models for an Atlas 2AS were used to develop the proposed population limits for medium and small launch vehicles. Failure rates that approximate the Titan 4 and Atlas 2AS failure rates based on their history of performance were used to represent the failure rates for mature launch vehicles. The overall failure rate for a new launch vehicle was assumed to be 0.31 as proposed in § 417.227(b)(6). Based on historical data on new launch vehicles, it was assumed that 15% of launch vehicle failures would occur during the first stage burn and 15% of those failures would result in impact outside the flight control lines if the flight safety system failed. The flight safety system was assumed to be in full compliance with the proposed requirements of subpart D of part 417 with a failure rate of 0.002.

J. Part 417, Appendix C, Flight Safety Analysis for an Unguided Suborbital Rocket Flown With a Wind Weighting Safety System and Flight Hazard Areas for Planned Impacts for All Launches

Appendix C of proposed part 417 would contain methodologies for performing the flight safety analysis required for the launch of an unguided suborbital rocket. The requirements in proposed appendix C for establishing ship and aircraft hazard areas for planned debris impact, such as for jettisoned spent stages and fairings, apply to all launches. The FAA proposes that a launch operator perform a flight safety analysis to determine the launch parameters and conditions under which an unguided suborbital rocket can be flown using a wind weighting safety system and without a flight safety system in accordance with proposed § 417.235. The results of this analysis would be required to show that any adverse effects resulting from flight would be contained within controlled operational areas, and that any flight hardware or payload impacts would occur within planned impact areas. The flight safety analysis must demonstrate compliance with the safety criteria and operational requirements for the launch of an unguided suborbital rocket contained in proposed § 417.125. The FAA would require that a launch operator ensure that the flight safety analysis for an unguided suborbital rocket be conducted in accordance with the methodologies provided in proposed appendix C unless the FAA approved alternative methods. Any alternative that meets the intent of the requirements of proposed appendix C may be submitted to the FAA through the licensing process, whether as part of an initial application for a license or as a request for a license modification, for evaluation of whether it satisfies the requirements of proposed § 417.235. A launch operator would also be required to perform a debris risk analysis for an unguided suborbital rocket launch in accordance with proposed § 417.227 and appendix B of part 417 and a conjunction on launch assessment in accordance with proposed § 417.233.

K. Part 417, Appendix D, Flight Termination System Components

Appendix D to proposed part 417 would contain requirements that apply to specific components of a flight termination system. Section D417.1(a) proposes that a launch operator ensure that the flight termination system requirements of proposed part 417, subpart D are met in conjunction with meeting the applicable component requirements of appendix D. The proposed requirements in appendix D were developed based on requirements traditionally used at federal launch ranges; however, the federal launch range requirements are not proposed in total. The FAA worked extensively with Air Force flight termination system experts to refine the requirements to a performance level that eliminates the use of design solutions as requirements wherever possible, while maintaining the lessons learned over the many years of Air Force launch experience. The FAA proposes to require a launch operator to meet these requirements unless otherwise approved through the licensing process. The FAA would use these requirements as guidelines when evaluating an alternate flight termination system approach on a case-by-case basis. A launch operator would be required to demonstrate clearly and convincingly that any alternative provides a level of safety equivalent to the proposed requirements.

Section D417.1 (b) would require the design of each flight termination system component to provide for the component to be tested in accordance with § 417.315 and appendix E of proposed part 417.

Section D417.1 (c) would require that a launch operator ensure that compliance with each requirement in proposed appendix D is documented as part of a safety review document prepared during the licensing process according to § 415.107 of part 415. A licensee would submit any change to the FAA for approval as a license modification.

Proposed § D417.3 would contain requirements for the component design environments and the design margins above the maximum predicted environment levels that each flight termination system component must be capable of withstanding without degradation in performance. This section would define the environments and design margins for thermal, random vibration, shock, acceleration, acoustic and other environments to which the component could be exposed.

L. Part 417, Appendix E, Flight Termination System Component Testing and Analysis

Appendix E of proposed part 417 would contain testing requirements applicable to specific flight termination system components. The FAA proposes to require that flight termination system components be subjected to a comprehensive test program patterned after the approach developed at the federal launch ranges over many year of experience. This approach provides for demonstrating the reliability of flight termination system components and establishing an appropriate confidence in each component's reliability. The FAA worked extensively with Air Force flight termination system experts to refine the traditional requirements and develop the proposed regulatory requirements. What has resulted is both a reflection of current practice and an improvement intended to respond to launch operator requests for performance requirements. In response to the industry request for performance requirements, the FAA and the range safety personnel have attempted to capture the intent behind the ranges' flight termination system testing requirements. This creates an opportunity for flexibility on the part of the launch operator to employ different means of satisfying the performance driven test requirements. Both the FAA and the ranges believe that this represents an improvement over existing requirements. However, it does not, on a fundamental level represent a change from current requirements because both expressions of the requirements reflect the same goals. Performance requirements merely provide more flexibility in how one goes about achieving those goals.

Proposed appendix E would contain specific component, qualification, acceptance, and age surveillance tests to be implemented according to subpart D of proposed part 417. Compliance with proposed appendix E for each flight termination system component would be documented as part of a licensee's safety review document prepared according to proposed subpart F of part 415.

M. Part 417, Appendix, F, Flight Termination System Electronic Piece Parts

Appendix F of proposed part 417 would contain requirements for ensuring the quality of electronic piece parts used in flight termination system electronic components. The use of high quality electronic piece parts that perform consistently from one sampling of a part to the next is critical to ensuring the reliability of flight termination system components. The need for high quality parts becomes evident when reviewing the required approach for qualifying the design of a component and then building components for flight. When qualifying the design of a flight termination system component, a number of sample components are built and subjected to the required qualification tests. Qualification testing involves stressing a sample component beyond its intended operational environments to verify the required safety margins, and, in some cases, involves destructive testing and disassembly. Therefore, upon satisfying the qualification testing, a sample component must be retired and not used for flight. The use of high quality piece parts, which perform consistently from one sample part to the next, provides assurance that when the flight components are built they will be capable of the same performance that was demonstrated by the sample component that was qualification tested.

Piece parts may be purchased with different quality ratings depending on the amount of quality control and testing performed by the manufacturer to ensure that the parts perform with consistent reliability. Piece parts with a higher quality rating have a correspondingly higher price. A sample piece part with a lessor quality rating may in fact be just as reliable as a similar part with a higher rating, without, however, the assurances for consistent performance from one sample part to the next that come with the higher rating. Rather then just require that a launch operator purchase piece parts with a certain quality rating, the federal launch ranges have, within the past few years, developed an approach that allows a launch operator to upgrade the rating of an electronic piece part through testing. This allows the launch operator some options in selecting piece parts for a flight termination system while providing for an acceptable level of reliability assurance. The FAA worked in coordination with Air Force flight termination system experts to refine the piece part selection criteria and testing requirements and develop the proposed regulatory approach provided in appendix F. Proposed appendix F would contain requirements that address capacitors, connectors, diodes, transistors, hybrids, inductors, transformers, magnetic parts, microcircuits, resistors, and wire.

N. Part 417, Appendix G, Natural and Triggered Lightning Flight Commit Criteria

Proposed appendix G would provide flight commit criteria that protect against natural and triggered lightning during the flight of a launch vehicle. The FAA proposes to require a launch operator to implement these criteria in accordance with proposed § 417.113 for any launch vehicle that utilizes a flight safety system. The primary concern behind the proposed requirements is that a lightning strike that could disable a flight safety system yet allow continued flight of the launch vehicle without the ability to control flight termination. Criteria to guard against this eventuality were developed by a Lightning Advisory Panel composed of nationally recognized experts in the field of atmospheric electricity. (Revised 45 Space Wing Range Safety (Natural and Triggered Lightning) Weather Launch Commit Criteria, LCC–K 5/26/98) NASA and the Air Force chartered this panel and have adopted these updated criteria for use at the federal launch ranges. These criteria cover a broad range of conditions, which apply to most launches at most launch sites; however, there may be exceptions. The FAA would require a launch operator to determine if any of these criteria do not apply to a planned licensed launch and provide the FAA with a justification during the licensing process in accordance with proposed § 415.115(e). The FAA proposes to approve a launch operator's flight commit criteria as part of the terms of a launch license.

O. Part 417, Appendix H, Safety Critical Computing Systems and Software

Proposed appendix H would contain safety requirements for all flight and ground systems for computing systems that perform or may perform any software safety critical function. The FAA would require a launch operator to ensure that any computing system with a software safety critical function associated with handling, preflight assembly, checkout, test, or flight of a launch vehicle, including any flight safety system, be implemented in accordance with the proposed appendix. The FAA proposes that software safety critical functions include, but need not be limited to the following: software used to control or monitor the functioning of safety critical hardware; software used or having the capability to monitor or control hazardous systems [17]; software associated with fault detection of safety critical hardware including software associated with fault signal transmission (faults shall include any manifestation of an error in software); software that responds to the detection of a safety critical fault; any software that is part of a flight safety system; processor interrupt software associated with safety critical software; and any software used to compute safety critical data. The FAA would require a launch operator to identify all software safety critical functions associated with its computing systems and software. For each software safety critical function, a launch operator would be required to define the boundaries of the associated system or software and implement the analysis, test, and other software validation requirements contained in this appendix. The requirements contained in proposed appendix H were adapted from the approach used successfully at the Air Force launch ranges and should therefore be familiar to current launch operators.

P. Part 417, Appendix I, Methodologies for Toxic Release Analysis

Proposed appendix I would provide methodologies for performing toxic release hazard analysis for the flight of a launch vehicle to contain the hazards or to determine whether risks created by toxic hazards remained within acceptable limits as identified in proposed § 417.107(b). Proposed appendix I would also provide methodologies for addressing the toxic hazards of launch processing at a launch site in the United States. For purposes of flight safety,[18] this appendix would prescribe a method for establishing flight commit criteria for each launch to protect the public from a casualty arising out of any potential toxic release during flight. A launch operator would first identify a toxic hazard area around the proposed launch point. The toxic hazard area would consist of a circle whose radius consisted of the greatest toxic hazard distance identified by the tables proposed in appendix I. If the toxic hazard area contained no members of the public, or if the launch operator were able to convince all members of the public to leave the toxic hazard area during flight through evacuation, the launch operator would be subject to no additional requirements under appendix I. If a launch operator were unable to avoid the presence of the public in the toxic hazard area, appendix I would require the launch operator to constrain preflight fueling and flight of a launch vehicle to times during which prevailing winds would transport any toxic release away from populated areas that would otherwise be at risk due to their presence within the toxic hazard area.

Current rocket propulsion systems require many pounds of chemical propellant for each pound of payload placed into orbit. Rocket motors rely on propellant combinations that consist of both fuel and oxidizer. Many of the chemical propellants currently in use are compounds that are toxic or produce toxic combustion byproducts. Among the toxic liquid propellants are the hydrazine based fuels: hydrazine, monomethylhydrazine (MMH) and unsymmetrical-dimethylhydrazine (UDMH). These fuels are toxic compounds and pose a potential air borne toxic hazard if spilled or released during a catastrophic failure of the launch vehicle. The hydrazine based fuels react with liquid oxidizers such as nitrogen tetroxide or nitric acid. These oxidizers are also toxic compounds and pose a potential hazard if spilled or released during a launch vehicle failure.

Solid propellants are also in common use in rocket motors and are often employed in conjunction with liquid propellant booster stages. Solid propellants are typically formulated from a mixture of solid fuel (such as, aluminum powder), solid oxidizer (such as, ammonium perchlorate) and polymeric binder (such as, PBAN). Most commercial launch vehicles use ammonium perchlorate (AP) based solid propellant. These AP based solid fuels are non-toxic in their solid state but produce approximately 20% by weight of toxic hydrogen chloride (HCl) gas as a combustion byproduct. Therefore the AP based fuels produce toxic emissions from both normal launch and abort scenarios. During launch vehicle processing, conditions may arise that will cause solid rocket propellant ignition or combustion, when, for instance a motor is dropped during movement or stacking, or static build up occurs on open grain propellant. Solid propellants using metal powders as the fuel also produce metal oxide particulates as a combustion by-product. Depending upon the size distribution and chemical composition, these particulates may also constitute a potential hazard.

Once released to the atmosphere, vaporized liquid propellants and gaseous propellant combustion products are subject to transport and diffusion by the local winds and atmospheric turbulence. Energy produced by the propellant chemical reactions may also cause the exhaust cloud to rise some distance above the initial release altitude. The quantity of material emitted, the height above ground of the emitted material, the prevailing weather conditions and the toxicity of the emitted chemicals are all factors affecting the hazard to people downwind of the release.

A launch operator's toxic release hazard analysis must determine any potential public hazards from any toxic release that will occur during the proposed flight of a launch vehicle or that would occur in the event of a flight mishap or that could occur during launch processing at the launch site in preparation for flight. A launch operator shall use the results of the toxic release

[17] The question may arise as to whether software used to monitor or control hazardous systems encompasses guidance software in light of its control of a launch vehicle's engines. The analysis of whether such software would be considered safety critical would have to address whether the launch vehicle relied on a flight safety system to terminate flight. If it did, the guidance software would likely not be treated as safety critical. If someone proposed to dispense with a flight safety system, the reliability of the software governing the guidance system would likely increase greatly in significance.

[18] Launch processing is addressed in greater detail in the discussion of subpart E of part 417.

hazard analysis to establish flight commit criteria for each launch and hazard controls for launch processing. A launch operator's toxic release hazard analysis must determine if toxic release can occur based on an evaluation of the propellants, launch vehicle materials, and estimated combustion products. This evaluation must account for both normal combustion products and the chemical composition of any unreacted propellants.

The FAA proposes that a launch operator evaluate potential toxic hazards in accordance with a multi-level screening approach in which the launch operator employs either exclusion, containment, or statistical risk management to prevent casualties that could arise out of exposure to any toxic release. The methodologies contained in appendix I for accomplishing this screening approach were developed based on the processes currently used at the Air Force launch ranges which have been highly successful in protecting the public from potential toxic release. The Air Force relies on sophisticated computer modeling to predict the dispersion of a toxic propellant in the atmosphere and its effect on the surrounding area. This type of modeling is available to a launch operator through the Air Force or commercially. It does, however, require significant expertise. The FAA worked in coordination with the Air Force, using the Air Force toxic release models to develop the proposed appendix I tables for determining hazard distances for potential release during the flight of a launch vehicle. The FAA believes the proposed containment methodology will work for a majority of launches. If not, a launch operator may elect to employ the more involved modeling and risk assessment techniques to demonstrate satisfaction of the risk criteria.

Paperwork Reduction Act

As required by the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.*, the Federal Aviation Administration has reviewed the information collection requirements associated with this notice of proposed rulemaking. The FAA has determined that there would be no additional burden to respondents over and above that which the Office of Management and Budget has already approved under the existing rule, titled, ''Commercial Space Transportation Licensing Regulations'' (OMB control number 2120–0608). Under the existing rule, the FAA considers license applications to launch from non-federal sites on a case-by-case basis. In conducting a case-by-case review, the FAA gives due consideration to current practices in space transportation, generally involving launches from federal sites. Accordingly, the FAA believes that, under this proposed rule, there would be no additional information collection not already included in the previously approved information collection activity. This rule would eliminate the case-by-case review, thereby streamlining the licensing process, and would not place any additional burden on the respondent.

Regulatory Evaluation Summary

Changes to federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each federal agency propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980, as amended March 1996, requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. 2531–25330 prohibit agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act also requires the consideration of international standards and, where appropriate, that they be the basis of U.S. standards. And fourth, the Unfunded Mandates Reform Act of 1995 requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a federal mandate likely to result in the expenditure by state, local or tribal governments, in the aggregate, or by the private sector, of $100 million or more. In conducting these analyses, the FAA has determined that this proposed rule: (1) Is not ''a significant regulatory action'' as defined in the Executive Order and in the Department of Transportation Regulatory Policies and Procedures; (2) will not have a significant impact on a substantial number of small entities; (3) will not impose restraints on international trade; and (4) does not contain any federal intergovernmental or private sector mandate. These analyses, available in the docket, are summarized below.

This proposed rule would codify the FAA's license application process for launch from a non-federal launch site. The proposed regulations are also intended to codify the safety requirements for launch operators regarding license requirements, criteria, and responsibilities in order to protect the public from the hazards of launch whether launching from a federal launch range or a non-federal launch site.

The FAA does not expect there to be any change in safety benefits. There may be some cost savings to the licensee because launch operators would have improved knowledge of the FAA license requirements, data and information requirements, and reporting requirements and formats beforehand. The FAA codified requirements will apply to all licensed commercial launches. Launch operators would know the FAA and federal range requirements, data and information requirements, and reporting requirements and formats. Finally, there may be some cost savings from launching at federal ranges since the launch operators would have improved knowledge of requirements.

The incremental cost of this proposal is expected to be at most, minimal. In general, there would be no change in costs to the licensee of satisfying the requirements of the proposed rulemaking. Costs would be the same whether licensing on a case-by-case basis or according to the proposed rulemaking.

In view of the minimal additional cost of compliance to the proposed rule, the FAA has determined that the proposed rule would be cost-justified.

Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes ''as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statues, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation. To achieve that principal, the Act requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions.'' The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule would have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 act provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The

FAA conducted the required review of this proposed rule and determined that it would not have a significant economic impact on a substantial number of small entities. Enactment of this proposal would impose, at most, only minimal cost. Accordingly, pursuant to the Regulatory Flexibility Act, 5 U.S.C. 605(b), the FAA certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits federal agencies from promulgating any standards or engaging in any related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and where appropriate, that they be the basis for U.S. standards. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

In accordance with the above statute and policy, the FAA has assessed the potential effect of this proposed rule and has determined that it would impose the same costs on domestic and international entities and thus has a neutral trade impact.

Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. The FAA has determined that this action will not have a substantial direct effect on the states, on the relationship between the national U.S. Government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, the FAA has determined that this final rule does not have federalism implications.

Unfunded Mandates

The Unfunded Mandates Reform Act of 1995 (UMRA), enacted as Pub. L. 104–4 on March 22, 1995, is intended, among other things, to curb the practice of imposing unfunded federal mandates on state, local, and tribal governments.

Title II of the Act requires each federal agency to prepare a written statement assessing the effects of any federal mandate in a proposed or final agency rule that may result in a $100 million or more expenditure (adjusted annually for inflation) in any one year by state, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

This proposed rule does not contain such a mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

Environmental Assessment

The FAA has determined that the proposed amendments to the commercial space transportation licensing and safety rules are categorically excluded from environmental review under 102(2)(C) of the National Environmental Policy Act (NEPA). The proposed rules, which address obtaining and maintaining a license, are administrative and procedural in nature and are therefore categorically excluded under FAA Order 1050.1D, appendix 4, paragraph 4(i). In addition, part 415 already requires an applicant to submit sufficient environmental information for the FAA to comply with NEPA and other applicable environmental laws and regulations during the processing of each license application, thereby ensuring that any significant adverse environmental impacts from licensing commercial launches will be considered during the application process. Accordingly, the FAA has determined that this rule is categorically excluded because no significant impacts to the human environment will result from finalization or implementation of its administrative and procedural provisions for licensing commercial launches.

Energy Impact

The energy impact of the rulemaking action has been assessed in accordance with the Energy Policy and Conservation Act (EPCA) and Public Law 94–163, as amended (42 U.S.C. 6362). It has been determined that it is not a major regulatory action under the provisions of the EPCA.

List of Subjects

14 CFR Part 413

Confidential business information, Space transportation and exploration, Reporting and recordkeeping requirements.

14 CFR Part 415

Rockets, Space transportation and exploration.

14 CFR Part 417

Aviation safety, Reporting and recordkeeping requirements, Rockets, Space transportation and exploration.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend parts 413, 415 and 417 of Chapter III, Title 14, Code of Federal Regulations as follows:

PART 413—LICENSE APPLICATION PROCEDURES

1. The authority citation for part 413 continues to read as follows:

Authority: 49 U.S.C. 70101–70121.

2. Amend § 413.7 by adding paragraph (d) to read as follows:

§ 413.7 Application.

* * * * *

(d) *Measurement system consistency.* For each analysis, an applicant must employ a consistent measurements system, whether English or metric, in its application and licensing information.

PART 415—LAUNCH LICENSE

3. The authority citation for part 415 continues to read as follows:

Authority: 49 U.S.C. 70101–70121.

4. Revise § 415.1 to read as follows:

Subpart A—General

§ 415.1 Scope.

This part prescribes requirements for obtaining a license to launch a launch vehicle, other than a reusable launch vehicle, and post-licensing requirements with which a licensee shall comply to remain licensed. Post-licensing requirements governing launch from a federal launch range or a non-federal launch site are also contained in part 417 of this subchapter. Requirements for preparing a license application are contained in part 413 of this chapter.

5. Amend § 415.51 to add the following sentence to the end of the section: "All payloads, exempt or not, are subject to the safety requirements of subparts C and F of this part and of part 417 of this chapter."

6. In § 415.73, amend paragraph (b)(2) by removing the words "submitted in accordance with subpart D of this part".

7. Redesignated §§ 415.101 and 415.103 as §§ 415.201 and 415.203, respectively.

8. Revise subpart F to read as follows:

Subpart F—Safety Review and Approval for Launch of an Expendable Launch Vehicle From a Non-Federal Launch Site

Sec.

Subpart F—Safety Review and Approval for Launch of an Expendable Launch Vehicle From a Non-Federal Launch Site

§§ 415.91–415.100 [Reserved]

§ 415.101 Scope.

(a) This Subpart F contains requirements that a launch operator must meet as part of the safety review process when applying for a license to launch an expendable launch vehicle from a non-federal launch site. This subpart identifies specific tasks that an applicant must complete and identifies the safety review material that an applicant must submit. This subpart also covers all administrative requirements, such as when and how the data is to be submitted, as well as the requirements for the form and content of each data submission.

(b) The requirements in this subpart apply to orbital launch vehicles and guided and unguided suborbital launch vehicles. Requirements in §§ 415.103 through 415.125 apply to all proposed launches of expendable launch vehicles. Sections 415.127 through 415.131 contain the flight safety system related requirements and apply to all expendable launch vehicles that use a flight safety system to ensure public safety.

(c) Material submitted to the FAA under this subpart measures an applicant's ability to comply with the launch operator responsibilities and technical requirements in part 417 of this chapter. The related requirements in part 417 are referenced in this subpart where applicable. To facilitate production of the safety review material required by this subpart, an applicant must first become familiar with the launch operator requirements in part 417 of this chapter.

§ 415.103 General.

(a) The FAA conducts a safety review as part of the licensing process to determine whether a launch license applicant will conduct launch processing and flight without jeopardizing public health and safety and safety of property. The FAA issues a safety approval if the applicant satisfies the requirements of this subpart and demonstrates, through the safety review process of this subpart, that it will meet the safety responsibilities and requirements for launch contained in part 417 of this chapter.

(b) The FAA advises an applicant, in writing, of any issue raised during a safety review that would impede issuance of a safety approval. The applicant may respond, in writing, or amend its license application in accordance with § 413.17 of this chapter.

(c) An applicant shall make available to the FAA upon request a copy of any record required by this subpart including any material incorporated into a license application by reference.

§ 415.105 Pre-application consultation.

(a) An applicant shall participate in no less than one pre-application consultation meeting at FAA headquarters when planning to apply for a new launch license. The purpose of the consultation is to review the proposed launch and obtain direction from the FAA related to the licensing process.

(b) When applying for a new launch license, a pre-application consultation meeting must be conducted no later than 24 months before an applicant brings any launch vehicle to the proposed launch site and before the applicant begins preparation of the initial flight safety analysis required by § 415.115. An applicant may request additional pre-application consultation meetings.

(c) At a pre-application consultation meeting, an applicant shall provide as complete a description of the planned launch as is available at the time. Data presented by an applicant to the FAA during a pre-application consultation meeting must include, but need not be limited to, the following:

(1) *Launch vehicle.* A launch vehicle description, the planned trajectory and flight azimuth, a description of any flight termination system, and a description of all hazards associated with the launch vehicle and any payload, including the type and amounts of all propellants, explosives, toxic materials and any radionuclides.

(2) *Proposed mission.* The apogee, perigee, and inclination of any orbital objects and any stage or other component impact locations.

(3) *Potential launch site.* The name and location of the proposed launch site, including latitude and longitude, and identity of any launch site operator of that proposed site and identification of any facilities at the launch site that will be used for launch processing and flight.

§ 415.107 Safety review document.

(a) A license applicant shall submit a safety review document that contains all the information required by this subpart for the FAA to conduct a launch safety review during the licensing process. An applicant shall comply with the scheduling requirements of part 417 of this chapter and this subpart. This subpart contains requirements for an applicant to submit certain data by a specified time during the licensing process. An applicant shall submit a sufficiently complete safety review document no later than six months before the applicant brings any launch vehicle to the proposed launch site.

(b) An applicant shall submit the data required for a safety review document in accordance with the outline in appendix B of this subpart. Sections 415.109 through 415.131 of this subpart provide the requirements for the content of each section of a safety review document. Related technical requirements and requirements governing a launch operator's implementation of the safety provisions described in its safety review document are provided in part 417 of this chapter. A launch operator's safety review document must be in accordance with the following:

(1) A safety review document must contain a glossary of unique terms and acronyms used listed in alphabetical order.

(2) A safety review document must contain a listing of all referenced standards, codes, and publications.

(3) A safety review document must be logically organized, with a clear and consistent page numbering system and with cross-referenced topics clearly identified.

(4) All text in a safety review document must be in English. If supplemental information is originally in a language other than English, the launch operator shall provide the FAA with an accurate and complete translation.

(5) All equations and mathematical relationships contained in a safety review document must be derived or referenced to a recognized standard or text and all algebraic parameters shall be clearly defined.

(6) The units of all numerical values shall be included in a safety review document.

(7) Any schematic diagrams contained in a safety review document shall include a legend or key that identifies all symbols used.

(c) An applicant's safety review document may include sections not required by appendix B of this part. An applicant shall identify each such section by using the word ''ADDED'' preceding the title of the added section. In the first paragraph of the added section, an applicant shall provide a description and justification for the circumstances that require an addition to the appendix B outline.

(d) There may be safety review document sections specified in appendix B of this part that are not applicable to an applicant's proposed launch. An applicant shall identify such sections in the application by the words ''NOT APPLICABLE'' preceding the title of the section. An applicant shall demonstrate why the section is not applicable.

(e) An applicant may reference documentation previously submitted to the FAA in a safety review document.

(f) An applicant shall submit one bound paper copy, one unbound paper copy, and an electronic copy of a safety review document as part of a license application.

(1) Paper copies must be on standard letter size paper, 8.5×11 inches. Larger paper may be used where needed for charts and graphs, but must be folded to 8.5×11 inches. The body text type font size shall be 12 points.

(2) The electronic copy must be in a data format compatible with commercial word processing software.

§ 415.109 Launch description.

(a) *General.* An applicant's safety review document must describe each proposed launch or series of launches in accordance with the requirements of this section.

(b) *Purpose.* An applicant's safety review document must describe the purpose of each proposed launch or series of launches and identify each launch vehicle, each payload, and any payload customer.

(c) *Launch schedule.* An applicant's safety review document must identify each planned flight date and time and each alternate date and time. For the licensing of more than one launch, an applicant shall submit schedule information for the earliest planned launch and best estimates for each subsequent launch.

(d) *Launch site description.* An applicant's safety review document must describe the proposed launch site and identify the following:

(1) All launch site boundaries;

(2) Launch point location, including latitude and longitude;

(3) Average weather conditions for the launch period;

(4) Major geographic features within 100 nautical miles of the launch point, including federal, state, local and any foreign territorial boundaries, elevations, rivers, lakes, canals, bridges, roadways, railroads, towns and cities, vessel ports, and airports; and

(5) Major shipping and aircraft routes within 100 nautical miles of the launch point.

(e) *Launch vehicle description.* An applicant's safety review document must describe the proposed launch vehicle. An applicant shall submit a written description and a drawing of the launch vehicle that identifies major stages, physical dimensions, the location of any flight termination system hardware, and the location of any tracking aids. The drawing must also identify the location of major vehicle control systems, propulsion systems, pressure vessels, and any other hardware that contains potential hazardous energy or hazardous material. The launch vehicle description must include a table specifying the type and quantities of all hazardous materials including propellants, explosives, and toxic materials.

(f) *Payload description.* An applicant's safety review document must contain, or reference documentation previously submitted to the FAA that contains, the payload information required by § 415.59 for any payload in accordance with part 415, subpart D. The safety review document must also contain a table specifying the type and quantities of all hazardous materials within each payload.

(g) *Trajectory.* An applicant's safety review document must contain two drawings depicting trajectory information. One drawing must depict the proposed nominal flight profile with downrange depicted on the abscissa and altitude depicted on the ordinate axis. The nominal flight profile must be labeled to show each planned staging event and its time after liftoff from launch through orbital insertion or final impact. The second drawing must depict instantaneous impact point ground traces for each of the nominal trajectory, the three-sigma left lateral trajectory and the three-sigma right lateral trajectory determined in accordance with § 417.205 of this chapter. The trajectories must be depicted on a latitude/longitude grid, and the grid must include the outlines of any continents and islands. An applicant shall submit additional trajectory information as part of the flight safety analysis data required by § 415.115.

(h) *Staging events.* An applicant's safety review document must contain a table of nominal and ± three-sigma times for each major staging event and a description of each event, including the predicted impact point and dispersion of each spent stage.

(i) *Vehicle performance graphs.* An applicant's safety review document must contain graphs of the nominal and ± three-sigma values as a function of time after liftoff for the following launch vehicle performance parameters: thrust, altitude, velocity, instantaneous impact point arc-range measured from the launch point, and present position arc-range measured from the launch point.

(j) *Unguided suborbital rocket.* For launch of an unguided suborbital rocket, in addition to the other applicable data requirements contained in this section, an applicant's safety review document must describe the rocket design configuration. The description must include:

(1) Construction materials and assembly of rocket body and control surfaces;

(2) Physical dimensions and weight;

(3) Propulsion and safety critical systems; and

(4) Location of the unguided suborbital rocket's center of pressure in relation to its center of gravity for the entire flight profile.

§ 415.111 Launch operator information.

(a) *Launch operator administrative information.* An applicant's safety review document must contain, or reference documentation previously submitted to the FAA that contains, the launch operator administrative information required by § 413.7(b) of this chapter.

(b) *Launch operator organization.* An applicant's safety review document must describe the applicant's organization established to ensure public safety and satisfy the requirements of part 417 of this chapter. The safety review document must describe the launch management positions and launch team organizational elements established by the applicant as required by § 417.103 of this chapter. An applicant's internal management positions and organizational elements shall be identified as such and any contractors to the applicant shall be identified as such. An applicant's safety review document must contain organizational charts and written text that identify and describe:

(1) All launch management positions.

(2) All launch team organizational elements.

(3) The lines of communication and approval authority for launch safety decisions.

(4) The specific safety functions performed by each launch management position and organizational element.

§ 415.113 Launch personnel certification program.

(a) A safety review document must describe how the applicant will satisfy the personnel certification program requirements of § 417.105 of this chapter and identify by position those individuals who implement the program.

(b) An applicant's safety review document must contain a copy of any program documentation used to implement the personnel certification program.

(c) An applicant's safety review document must contain a table listing each hazardous operation or safety critical task that certified personnel must perform. For each task, the table must identify by position the individual who reviews personnel qualifications and certifies personnel for performing the task.

§ 415.115 Flight safety.

(a) *Flight safety analysis.* An applicant shall perform flight safety analysis for a proposed launch or proposed series of launches in accordance with subpart C of part 417 of this chapter. An applicant's safety review document must contain analysis products and other data that demonstrate the applicant's ability to meet the public risk criteria in § 417.107 of this chapter and to establish launch safety rules in accordance with § 417.113 of this chapter. An applicant's flight safety analysis must satisfy the following requirements:

(1) An applicant shall submit the flight safety analysis data required by this section no later than 18 months before the applicant brings any launch vehicle to the proposed launch site.

(2) The flight safety analysis performed by an applicant must be completed as specified in subpart C of part 417 of this chapter. An applicant may identify those portions of the analysis that it expects to refine as the first proposed flight date approaches. An applicant shall identify any analysis product subject to change, describe what needs to be done to finalize the product, and identify when before flight it will be finalized. If a license is for more than one launch, an applicant shall provide a discussion on the applicability of the analysis methods to each of the proposed launches and identify any expected differences in the flight safety analysis methods among the proposed launches. Once licensed, a launch operator is required to perform flight safety analysis for each launch using final launch vehicle performance and other data in accordance with subpart C of part 417 of this chapter and using the analysis methods approved by the FAA through the licensing process or as a license modification.

(3) An applicant's safety review document must describe each analysis method employed to meet the analysis requirements of part 417, subpart C of this chapter. An applicant's safety review document must contain the analysis products for each of the analyses required by part 417, subpart C of this chapter for each proposed launch. An applicant's safety review document must contain the following data for each analysis product:

(i) A discussion and justification of any assumptions made by the applicant when performing the analysis; and

(ii) A sample of each flight safety analysis computation showing input data and processing algorithms leading to the required analysis products.

(b) *Conjunction on launch assessment.* An applicant's safety review document must contain conjunction on launch assessment input data for the first proposed launch. The input data submitted as part of a license application must satisfy the requirements of § 417.233 of this chapter. An applicant need not obtain a conjunction on launch assessment from United States Space Command prior to being issued a license.

(c) *Radionuclides.* An applicant's safety review document must identify the type and quantity of any radionuclide on a launch vehicle or payload. For each radionuclide, an applicant's safety review document must contain a reference list of all documentation addressing the safety of its intended use and describe all approvals by the Nuclear Regulatory Commission for launch processing. An applicant shall provide radionuclide information to the FAA at pre-application consultation in accordance with § 415.105. The FAA will evaluate launch of any radionuclide on a case-by-case basis, and issue an approval if the FAA finds that the launch is consistent with public health and safety.

(d) *Flight safety plan.* An applicant's safety review document must contain a flight safety plan that identifies the flight safety roles to be performed by the applicant's flight safety personnel; the flight safety rules, limits, and criteria identified by an applicant's flight safety analysis; and the specific flight safety requirements of part 417 of this chapter to be implemented for launch. The flight safety plan need not be restricted to public safety related issues and may combine other flight safety issues as well, such as employee safety, so as to be all-inclusive. A flight safety plan must include, but need not be limited to, the following:

(1) *Flight safety personnel.* Identification of personnel by position who approve and implement each part of the flight safety plan and any modifications to the plan. Identification of personnel by position who perform the flight safety analysis and ensure that the results, including the flight safety rules and establishment of flight hazard areas, are incorporated into the flight safety plan.

(2) *Flight safety rules.* Flight safety rules required by § 417.113 of this chapter.

(3) *Flight safety system.* A description of any flight safety system and its operation, including any preflight flight safety system tests to be performed.

(4) *Trajectory and debris dispersion data.* A description of the launch trajectory, including planned orbital parameters, stage burnout times and state vectors, and planned stage impact times, locations, and downrange and crossrange dispersions.

(5) *Flight hazard areas and safety clear zones.* Identification and location of the flight hazard areas and safety clear zones established for each launch in accordance with § 417.225 of this chapter, and identification of procedures for surveillance and clearance of these areas and zones as required by § 417.121(f).

(6) *Support systems and services.* Identification of any support systems and services to be implemented as part of ensuring flight safety, including any aircraft and ships and procedures that will be used during flight.

(7) *Flight safety operations.* A description of the flight safety related tests, reviews, rehearsals, and other flight safety operations to be conducted in accordance with §§ 417.115 through 417.121 of this chapter. A flight safety plan must contain or incorporate by reference written procedures for accomplishing all flight safety operations.

(e) *Natural and triggered lightning.* An applicant shall demonstrate that it will satisfy the flight commit criteria required by § 417.113(b)(5) of this chapter and appendix G of part 417 of this chapter for natural and triggered lightning. If an applicant's safety review document states that any flight commit criterion that is otherwise required by appendix G of part 417 of this chapter does not apply to a proposed launch, the applicant's safety review document must demonstrate that the criterion does not apply.

(f) *Unguided suborbital rockets.* For the launch of an unguided suborbital rocket, the flight safety data submitted in an applicant's safety review document must meet the requirements of this section and demonstrate compliance with the requirements contained in § 417.125 and § 417.235 of this chapter. An applicant's flight safety plan for the launch of an unguided suborbital rocket must meet the requirements in paragraph (d) of this section and provide the following data:

(1) Launch angle limits;

(2) Procedures for measurement of launch day winds and for performing wind weighting in accordance with §§ 417.125 and 417.235 of this chapter;

(3) Flight safety personnel qualifications and roles for performing wind weighting; and

(4) Procedures for any recovery of a launch vehicle component or payload.

§ 415.117 Ground safety.

(a) *General.* An applicant shall submit a ground safety analysis report and ground safety plan for its launch processing and post-launch operations in accordance with this section when launching from a launch site in the United States. Launch processing and post-launch operations at a launch site outside the United States may be subject to the requirements of the governing jurisdiction.

(b) *Ground safety analysis report.* An applicant shall perform a ground safety analysis of its launch processing and post-launch operations in accordance with subpart E of part 417 of this chapter. As part of its safety review document, an applicant shall submit a ground safety analysis report that reviews each system and operation used in launch processing and post-launch operations, and identifies all public hazards and the controls to be implemented to protect the public from each hazard. The ground safety analysis report must describe each of the launch operator's systems and operations and show that all hazards that could affect the public have been identified and controlled. A hazard that could affect the public is any hazard with an effect that may extend beyond the launch personnel doing the work and that has the potential to reach the public, regardless of where members of the public are located. An applicant shall perform a ground safety analysis in accordance with the requirements in part 417, subpart E of this chapter. This section contains requirements for the ground safety analysis report to be submitted in support of an applicant's safety review.

(1) An applicant shall submit an initial ground safety analysis report no later than 12 months before the applicant brings any launch vehicle to the proposed launch site. An initial ground safety analysis report must be in a proposed final or near final form and identify any incomplete items. An applicant shall document any incomplete items and track them to completion. An applicant shall resolve any FAA comments on the initial report and submit a complete ground safety analysis report, no later than two months before the applicant brings any launch vehicle to the proposed launch site. Furthermore, an applicant shall ensure that its ground safety analysis report is kept current. Any late developing change to a ground safety analysis report shall be coordinated with the FAA as an application amendment in accordance with § 413.11 of this chapter as soon as the need for the change is identified.

(2) An applicant shall submit a ground safety analysis report in accordance with the format and content requirements of appendix C of this part.

(3) All information in a ground safety analysis report must be verifiable, including design margins, fault tolerance and successful completion of tests. Any identified hardware must be traceable to an engineering drawing or other document that describes hardware configuration. Any test or analysis identified must be traceable to a report or memorandum that contains details about how the test or analysis was performed and the results and identifies those who ensure the accuracy of the test or analysis. Any procedural hazard control identified must be traceable to a written procedure, approved by the launch safety director or designee, with the paragraph or step number of the procedure specified. A verifiable hazard control shall be identified for each hazard. For each hazard control the report must reference a released drawing, report, procedure or other document that verifies the existence of the hazard control. A launch operator shall maintain records, in accordance with § 415.77, of the verification documentation that supports the information in the ground safety analysis report.

(4) Any text describing a sequence of events or multiple pieces of information must be provided in the form of numbered lists. An applicant's ground safety analysis report must contain figures to illustrate systems and aid understanding of the data provided in the text, such as sketches to show dimensions and configuration, and schematics that show how systems function and how fault tolerance is provided. Facility drawings shall be provided to illustrate where operations take place and how public access to a hazard area would be controlled.

(5) A ground safety analysis report must be approved and signed by the launch safety director and the launch director. Each individual who prepares any part of a ground safety analysis report, shall sign and date a written statement certifying that the part of the report that person prepared is true, complete and accurate as of that date. Each statement must be included as part of the report or as an attachment.

(c) *Ground safety plan.* An applicant's safety review document must contain a ground safety plan that describes the ground safety roles to be performed by launch personnel and the ground safety rules and procedures to be implemented to protect public safety. This plan must describe implementation of the hazard controls identified by an applicant's ground safety analysis and implementation of the ground safety requirements of subpart E of part 417 of this chapter. A ground safety plan must address all public safety related issues and may include other ground safety issues if an applicant intends it to have a broader scope. A ground safety plan must include, but need not be limited to, the following:

(1) A description of the launch vehicle and payload identifying all hazards, including explosives, propellants, toxics and other hazardous materials, radiation sources, and pressurized systems. A ground safety plan must include figures that show the location of each hazard on the launch vehicle and where at the launch site, launch processing involving the hazard is performed.

(2) Propellant and explosive information including:

(i) Total net explosive weight of the launch operator's propellants and explosives for each explosive hazard facility as defined in part 420 of this chapter;

(ii) For toxic propellants, any hazard controls and process constraints determined in accordance with the launch operator's toxic release hazard analysis for launch processing performed in accordance with § 417.229 and appendix I of part 417 of this chapter.

(iii) The facility explosive and occupancy limits;

(iv) Individual explosive item data, including configuration (such as, solid motor, motor segment, or liquid propellant container), explosive material, net explosive weight, storage hazard classification and compatibility group as defined in part 420 of this chapter;

(3) A graphic depiction of the layout of the launch operator's launch complex and other launch processing facilities at the launch site. The depiction must show separation distances and any intervening barriers between explosive items that affect the total net explosive weight that each facility is sited to accommodate. An applicant shall identify any proposed facility modifications or operational changes that may affect a launch site operator's explosive site plan.

(4) A description of the process for ensuring that any procedures and procedure changes are reviewed for safety implications and are approved by a launch operator's launch safety director or designee.

(5) Procedures that launch personnel will follow when reporting a hazard or mishap to the launch operator's safety organization.

(6) Procedures for ensuring that personnel have the qualifications and certifications needed to perform a task involving a hazard that could affect public safety.

(7) A summary of the means for announcing when any hazardous operation is taking place, the means for making emergency announcements and alarms, and identification of the recipients of each type of announcement.

(8) A summary of the means of implementing access control to safety clear zones and hazard areas, including any procedures for allowing public access to such areas.

(9) General ground safety rules.

(10) A description of the process for ensuring that all safety precautions and verifications are in place prior to, during, and after hazardous operations. This includes the process for verification that an area can be returned to a non-hazardous work status.

(11) A flow chart of launch processing and a list of all major tasks. This must include all hazardous tasks and an identification of where and when, with respect to liftoff, they will take place.

(12) Identification of safety clear zones and hazard areas established in accordance with § 417.411 of this chapter.

(13) A description of the hazard controls and required verifications, in accordance with the ground safety analysis, for each task that creates a public hazard, including procedures for implementing any safety clear zones for the protection of the public.

(14) For each task that creates a public hazard, a procedure for the use of any safety equipment that protects the public.

(15) For each task creating a hazard that could affect the public, the requirements and procedures for coordinating with any launch site operator and local authorities.

(16) Generic emergency procedures that apply to all emergencies and the emergency procedures that apply to specific tasks that may create a public hazard including any task that involves a hazardous material as described in § 417.407 of this chapter.

(17) A listing of safety documentation, by title and date, which supplements the data provided in the ground safety plan, such as the ground safety analysis report, explosive quantity-distance site plan and other ground safety related documentation.

§ 415.119 Launch plans.

(a) *General.* In addition to the flight and ground safety plans required by §§ 415.115 and 415.117, an applicant's safety review document must contain the public safety related launch plans required by this section. Each plan must identify operation personnel and their duties, contain mission specific information for the first planned launch and include written procedures that contain the specifics of the operations and activities conducted in accordance with the plan. Procedures may be incorporated by reference. Each plan must identify personnel by position who approve and implement the plan, the related procedures, and any modification to the plan or procedures. An applicant shall incorporate each launch safety rule established in accordance with § 417.113 of this chapter into each related launch safety plan. An applicant's launch plans shall include, but need not be limited to, those required by this section.

(b) *Emergency response plan.* An applicant's safety review document must contain an emergency response plan that ensures public safety in the event of a mishap during launch processing or flight. An emergency response plan must identify emergency response personnel and their duties and describes the methods to be used to ensure public safety. An emergency response plan must define the process for providing assistance to any injured people and describe the methods used to control any hazards associated with a mishap. An emergency response plan must describe the types of emergency support required, equipment to be used, emergency response personnel and their qualifications, and any related agreements with any launch site operator and state, county or local government agencies. The types of emergency support described in the plan shall include, but need not be limited to, firefighting, explosive ordnance disposal, chemical spill response, and medical support.

(c) *Accident investigation plan.* An applicant's safety review document must contain an accident investigation plan that meets the requirements of § 415.41 of this part. The accident investigation requirements for launch from a federal launch range in part 415, subpart C also apply to launch from a non-federal launch site.

(d) *Launch support equipment and instrumentation plan.* An applicant's safety review document must contain a launch support equipment and instrumentation plan that ensures the reliability of the equipment and instrumentation that is involved in ensuring public safety during launch processing and flight. A launch support equipment and instrumentation plan must list and describe such equipment and must identify personnel who are responsible for its operations and maintenance and who must be certified in accordance with § 417.105 of this chapter. The plan must also contain, or incorporate by reference, written procedures for support equipment operation, test, and maintenance that are to be implemented for each launch. The plan must also identify equipment and instrumentation reliability and contingencies that protect the public in the event of a malfunction.

(e) *Configuration management and control plan.* A safety review document must contain a configuration management and control plan for all safety critical system, such as, any flight safety system and any launch processing system that represents a hazard to the public. A configuration management and control plan must define the applicant's process for managing and controlling any change to a safety critical system to ensure its reliability. For each system, the plan must identify each person with authority for approving design changes as well as the personnel, by position, who maintain documentation of the most current approved design. This plan must contain, or incorporate by reference, all configuration management and control procedures that apply to the launch vehicle and each support system.

(f) *Communications plan.* An applicant's safety review document must contain a communications plan that ensures clear concise communications between personnel involved in launch processing, countdown, and flight. A communications plan must list and describe all forms of communication that ensure public safety and any voice and data circuits required to allow real-time interface among launch control and safety personnel for each task during the conduct of hazardous operations, launch processing, countdown, and flight. This includes communications to locations outside of the launch site boundaries when those communications are necessary for public safety and includes those communications that are part of any flight safety system as required by § 417.327 of this chapter. A communications plan must delineate clear lines of communication and unimpeded flow of reporting and direction. The plan must define precise and formal communication protocols using well-defined terminology and acronyms that can be clearly understood over a voice network. The communications plan must also identify communication system reliability and backup circuits.

(g) *Frequency management plan.* An applicant's safety review document must contain a plan that identifies the radio frequencies used in support of a launch and the process for allocating use of those frequencies for each operation performed during launch processing and flight to avoid interference, and must identify and provide contact information for the personnel who implement the plan. A frequency management plan must:

(1) Identify each frequency, allowable frequency tolerances, and each frequency's intended use, operating power, and source;

(2) Provide for the monitoring of frequency usage and enforcement of frequency allocations;

(3) Identify agreements and procedures for coordinating use of radio frequencies with any launch site operator and any local and federal authorities, including the Federal Communications Commission; and

(4) Satisfy the requirements of any launch site operator's frequency management plan developed in compliance with part 420 of this chapter.

(h) *Security and hazard area surveillance plan.* An applicant's safety review document must contain a plan that defines the process for ensuring that any unauthorized persons, ships, trains, aircraft or other vehicles do not enter any hazard areas designated in accordance with the flight safety analysis or the ground safety analysis. The plan must describe how the launch operator will provide for day-of-flight surveillance of the flight hazard area established in accordance with § 417.225 of this chapter and ensure that the presence of any member of the public in or near a flight hazard area is consistent with flight commit criteria developed for each launch in accordance with § 417.113 of this chapter. This plan must identify the number of security and surveillance personnel employed for each launch and the qualifications and training each must have. This plan must identify the location of roadblocks and other security checkpoints, the times that each station must be manned, and any surveillance equipment used. This plan must contain, or incorporate by reference, all procedures for launch personnel control, handling of intruders, communications and coordination with launch personnel and other launch support entities, and implementation of any agreements with local authorities and any launch site operator.

(i) *Public coordination plan.* An applicant's safety review document must contain a plan that describes the processes for coordinating launch processing and flight with the local population and local government officials to ensure public safety. A public coordination plan must include the following:

(1) Procedures for implementing any launch-related agreements with local authorities;

(2) A schedule and procedures for the release of launch information prior to flight, post flight, and in the event of an anomaly;

(3) Procedures for public access to any launch viewing areas that are under the applicant's control; and

(4) A description of the interfaces established between launch personnel who implement the plan and any local authorities.

(j) *Local agreements and plans.* An applicant's safety review document must contain any agreements and plans with local authorities at or near a launch site whose support is needed to ensure public safety during all launch processing and flight activities. An applicant's local agreements and plans must satisfy any launch site operator's local agreements and plans developed in accordance with part 420 of this chapter. Local agreements and plans must include coordination with the following where applicable:

(1) Launch site operator;

(2) United States Coast Guard;

(3) FAA Air Traffic Control (ATC); and

(4) Any other local agency that supports the launch, such as local law enforcement agencies, emergency response agencies, fire departments, National Park Service, and Mineral Management Service.

(k) *Test plans.* An applicant's safety review document must contain a plan for the testing of each flight and ground system or equipment that provides public protection from adverse effects of launch processing and flight. Specific requirements applicable to testing of a flight safety system are provided in § 415.129 and subpart D of part 417 of this chapter. Each test plan must:

(1) Identify personnel who conduct the tests, and include a test schedule that indicates when specific tests are to be performed referenced to liftoff ;

(2) Identify the pass/fail criteria for each system or piece of equipment to be used for a launch;

(3) Contain, or incorporate by reference, test procedures for each system or piece of equipment to be used for a launch.

(l) *Countdown plan.* An applicant's safety review document must contain a countdown plan that describes the personnel and equipment that must be in place, the conditions that must be met, and the timed sequence of events that must take place to initiate flight of a launch vehicle while ensuring public safety. A countdown plan must:

(1) Cover the period of time when launch support personnel are to be at their designated stations through initiation of flight. (The period of time that a countdown plan covers may vary with launch vehicle configuration, the complexity of the supporting infrastructure, and complexity of vehicle processing leading to a flight attempt);

(2) Include procedures for handling anomalies that occur during a countdown and events and conditions that may result in a constraint to initiation of flight;

(3) Include procedures for delaying or holding a launch when necessary to allow for corrective actions, to await improved conditions, or to accommodate a launch wait;

(4) Describe a process for resolving issues that arise during a countdown and identify each person responsible for approving corrective actions; and

(5) Include a written countdown checklist that provides a formal decision process leading to flight initiation. A

countdown checklist must include the preflight tests of a flight safety system required in subpart D of part 417 of this chapter and must contain, but need not be limited to, the following:

(i) Identification of operations and specific actions completed and verifications performed that there are no constraints to flight and that all launch safety rules and launch commit criteria are satisfied;

(ii) Time of each event;

(iii) Identification of personnel responsible for each operation or specific action, including reporting to the launch conductor;

(iv) Identification of communication channel to be used for reporting each event;

(v) Identification of communication and event reporting protocols;

(vi) Polling of personnel who oversee all safety critical systems and operations to verify their readiness to proceed with the launch, and

(vii) Provisions for recording the status of countdown events.

(m) *Launch abort or delay recovery and recycle plan.* An applicant's safety review document must contain a plan for recovering from a launch abort or launch delay that results during a launch countdown and recycling for the next launch attempt following procedures that provide for public safety. The plan must:

(1) Contain, or incorporate by reference, all procedures for recovery from a launch abort or delay.

(2) Identify the conditions that must exist in order to make another launch attempt;

(3) Include a schedule depicting the flow of tasks and events in relation to when the abort or delay occurred and the new planned launch time;

(4) Identify all technical and readiness reviews scheduled to be conducted during the recovery period; and

(5) Identify the interfaces and supporting entities needed to support recovery operations.

(n) *License modification plan.* An applicant's safety review document must contain a plan that:

(1) Describes the applicant's process for identifying a proposed material change and making a request to the FAA for a launch license modification, pursuant to § 415.73, prior to implementing the change;

(2) Identifies the applicant's process for seeking a waiver from an FAA requirement under part 404 of this chapter;

(3) Describes a process for determining when a license modification is needed and the applicant's internal process for documenting, reviewing, and internally approving a request for license modification before it is submitted to the FAA; and

(4) Identifies the applicant's internal authorizing personnel.

(o) *Flight termination system electronic piece parts program plan.* An applicant's safety review document must contain a plan that describes the applicant's program for selecting and testing electronic piece parts used in a flight termination system to ensure their reliability. This plan must demonstrate compliance with the requirements of appendix F of part 417 of this chapter and must:

(1) Describe the applicant's program for selecting piece parts for use in a flight termination system;

(2) Identify any derating, qualification, screening, lot acceptance testing, and lot destructive physical analysis to be performed for electronic piece parts;

(3) Identify personnel who conduct the piece part tests;

(4) Identify the pass/fail criteria for each test for each piece part;

(5) Identify the levels to which each piece part specification will be derated;

(6) Contain, or incorporate by reference, test procedures for each piece part.

§ 415.121 Launch schedule and points of contact.

(a) An applicant's safety review document must contain a launch schedule that identifies each test, review, rehearsal, and safety critical preflight operation to be conducted for each launch in accordance with §§ 417.115, 417.117, 417.119, and 417.121 of this chapter. The schedule must show start and stop times for each activity referenced to liftoff. A schedule must include, but need not be limited to those activities required by part 417 of this chapter.

(b) Either as part of the schedule or as an attachment, an applicant's safety review document must contain a summary of each scheduled activity that includes criteria for successful completion of the activity and that identifies a person by position who oversees the activity.

§ 415.123 Computing systems and software.

(a) An applicant's safety review document must describe all computing systems and software that perform a software safety critical function for any operation performed during launch processing or flight that could have a hazardous effect on the public. This includes any software function that, if not performed, if performed out of sequence, or if performed incorrectly, may directly or indirectly cause a public safety hazard. An applicant shall implement such computing systems and software in accordance with § 417.123 and appendix H of part 417 of this chapter.

(b) An applicant's safety review document must list and describe all software safety critical functions involved in a proposed launch, including associated hardware and software interfaces. For each system with a software safety critical function, an applicant's safety review document must contain the following:

(1) A listing of all software safety critical functions including identification of safety critical interfaces with other systems;

(2) A description, including hardware, software, and layout, of any operator console and display;

(3) Flow charts or diagrams showing hardware data busses, hardware interfaces, software interfaces, data flow, power systems, and the functionality of each software safety critical function;

(4) Logic diagrams and software design descriptions;

(5) Listing of operator user manuals and documentation by title and date;

(6) The results of software hazard analyses as integrated into the system;

(7) Software test plan, test procedures, and test results; and

(8) Software development plan, including descriptions of the launch operator's implementation of the following:

(i) Software development process;

(ii) How the software will be partitioned;

(iii) Coding standards used;

(iv) Configuration control;

(v) How software changes will be implemented and tested;

(vi) How qualified software loads will be validated;

(vii) Policy on throughput and memory use limitations;

(viii) Software analysis;

(ix) Software testing and methods of independent verification and validation employed;

(x) Policy on the reuse of software;

(xi) Policy on the use of any commercial-off-the-shelf software; and

(xii) Operating system and language compilers to be employed.

§ 415.125 Unique safety policies and practices.

An applicant's safety review document must identify any public safety related policy and practice that is unique to the proposed launch in accordance with § 417.127 of this chapter. An applicant's safety review document must describe how each unique safety policy or practice provides for public safety.

§ 415.127 Flight safety system design and operation data.

(a) *General.* An applicant's safety review document must contain the flight safety system data identified in this section for the launch of an orbital or guided sub-orbital launch vehicle that uses a flight safety system to protect public safety in accordance with § 417.107(a) of this chapter. Unless otherwise specified, all data required by this section that is applicable to an applicant's flight safety system must be submitted no later than 18 months before the applicant brings any launch vehicle to a proposed launch site. An applicant shall participate in a series of technical meetings with the FAA as needed to facilitate the review and approval of a flight safety system and its implementation.

(b) *Flight safety system description.* A safety review document must contain an overview design description of an applicant's flight safety system and its operation. Flight safety system and subsystems design and operational requirements are provided in part 417, subpart D and the appendices to part 417 of this chapter.

(c) *Flight safety system diagram.* An applicant's safety review document must contain a block diagram that identifies all flight safety system subsystems. The diagram must include, but is not limited to, the following subsystems defined in part 417, subpart D of this chapter: flight termination system; command control system; tracking; telemetry; communications; flight safety data processing, display, and recording system; and flight safety official console.

(d) *Subsystem design information.* An applicant's safety review document must contain all of the following data as applicable to each subsystem identified in the block diagram required by paragraph (c) of this section:

(1) *Subsystem description.* A physical description of each subsystem and its components, its operation, and interfaces with other systems or subsystems.

(2) *Subsystem diagram.* A physical and functional diagram of each subsystem, including interfaces with other systems and subsystems.

(3) *Component location.* Drawings showing the location of all subsystem components as installed on the vehicle, and at the launch site.

(4) *Electronic components.* A physical description of each subsystem electronic component, including operating parameters and functions at the system and piece-part level. An applicant shall also provide the name of the manufacturer and the model number of each component where applicable and identify whether the component is custom designed and built or off-the-shelf-equipment.

(5) *Mechanical components.* An illustrated parts breakdown of all mechanically operated components for each subsystem, including the name of the manufacturer and any model number.

(6) *Subsystem compatibility.* A demonstration of the compatibility of the onboard launch vehicle flight termination system with the command control system.

(7) *Flight termination system component storage, operating, and service life.* A listing of all flight termination system components that have a critical storage, operating, or service life and a summary of the applicant's procedures for ensuring that each component does not exceed its storage, operating, or service life before flight.

(8) *Flight termination system element siting.* For a flight termination system, a description of where each subsystem element is sited, where cables are routed, and identification of mounting attach points and access points.

(9) *Flight termination system electrical connectors and connections and wiring diagrams and schematics.* For a flight termination system, a description of all subsystem electrical connectors and connections, and any electrical isolation. The safety review document must also contain system wiring diagrams and schematics and identify the test points to be used for integrated testing and checkout.

(10) *Flight termination system batteries.* A description of each flight termination system battery and cell, the name of the battery or cell manufacturer, and any model numbers.

(11) *Controls and displays.* For a flight safety official console, a description identifying all controls, displays, and charts depicting how real time vehicle data and flight safety limits are displayed. The description shall identify the scales used for displays and charts.

(e) *System analyses.* An applicant shall perform the reliability and other system analyses for a flight termination system and command control system in accordance with § 417.329. An applicant's safety review document must contain the results of each analysis.

(f) *Environmental design.* An applicant must determine the flight termination system maximum predicted environment levels in accordance with § 417.307(b) of this chapter and the design environments that include design margins in accordance with D417.3 of appendix D of part 417. An applicant's safety review document must contain a summary of the analyses and measurements used to derive the maximum predicted environment levels. The safety review document must contain a matrix that identifies the maximum predicted environment levels and the design environments.

(g) *Flight safety system compliance matrix.* An applicant's safety review document must contain a compliance matrix of the function, reliability, system, subsystem, and component requirements of part 417 of this chapter and its appendices. This matrix must identify each requirement and indicate compliance as follows:

(1) ''Yes'' shall be indicated if the applicant's system meets the requirement in part 417 of this chapter. The matrix shall reference documentation verifying compliance;

(2) ''Not applicable'' shall be indicated if the applicant's system design and operational environment are such that the requirement does not apply. For each such case, the applicant shall provide a clear and convincing demonstration of the non-applicability of that requirement as an attachment to the matrix; and

(3) ''Meets intent'' shall be indicated in each case where the applicant proposes to show that its system meets the intent of the requirement through some means other than those defined in part 417 of this chapter. For each such case, an applicant shall provide a clear and convincing demonstration through a technical rationale within the matrix, or as an attachment, that the proposed alternative achieves an equivalent level of safety.

(h) *Flight termination system installation procedures.* An applicant's safety review document must contain a list of the flight termination system installation procedures to be implemented in accordance with § 417.319 of this chapter and a synopsis of the procedures that demonstrates how they meet the requirements of § 417.319 of this chapter. The list must reference each procedure by title, any document number, and date.

(i) *Tracking validation procedures.* An applicant's safety review document must contain the procedures to be implemented according to § 417.121(h) of this chapter for validating that the accuracy of the launch vehicle tracking data supplied to the flight safety official is in accordance with the flight safety system design and flight safety limits developed in accordance with part 417 of this chapter.

§ 415.129 Flight safety system test data.

(a) *General.* An applicant's safety review document must contain the flight safety system test data required by this section. Except for test reports, an applicant shall submit all required test data no later than 12 months before the applicant brings any launch vehicle to the proposed launch site. An applicant may submit test data earlier to allow greater time for addressing issues that may be identified by the FAA and avoid possible impact on the proposed launch date. The requirements in this section apply to all testing required by part 417, subpart D of this chapter and its appendices, including qualification, acceptance, age surveillance, and preflight testing of a flight safety system and its subsystems and individual components. Flight safety system testing need not be completed before the FAA issues a launch license. Prior to flight, a licensee must successfully complete all required flight safety system testing and submit the completed test reports and summaries of test results required by § 417.315(f) and § 417.325(d) of this chapter.

(b) *Testing compliance matrix.* An applicant's safety review document must contain a compliance matrix of all the flight safety system, subsystem, and component testing requirements of part 417 and appendices to part 417 of this chapter. This matrix must identify each test requirement and indicate compliance as follows:

(1) ''Yes'' shall be indicated if the applicant's system or component testing is performed in accordance with part 417 of this chapter. The matrix shall reference documentation verifying compliance;

(2) ''Not applicable'' shall be indicated if the applicant's system design and operational environment are such that the test requirement does not apply. For each such case, an applicant shall provide a clear and convincing demonstration, providing its technical rationale within the matrix or as an attachment to the matrix, that the test requirement does not apply;

(3) ''Similarity'' shall be indicated where the test requirement applies to a component whose design is being qualified based on its similarity to a previously qualified component that successfully passed all the required testing. For each such case, an applicant shall provide a demonstration of similarity by performing the analysis required by appendix E of part 417 of this chapter. The results of each analysis must be contained within the matrix or as an attachment; and

(4) ''Meets intent'' shall be indicated in each case where the applicant proposes to show that its test program meets the intent of the requirement through some means other than those in part 417 of this chapter. For each such case, an applicant shall provide a clear and convincing demonstration through a technical rationale, within the matrix or as an attachment, that the alternative means achieves an equivalent level of safety.

(c) *Test program overview and schedule.* A safety review document must contain a summary of the applicant's flight safety system test program that identifies where the tests are to be performed and the personnel who ensure the validity of the results. A safety review document must contain a schedule for successfully completing each test before flight. The schedule must be referenced to the time of liftoff for the first proposed flight attempt.

(d) *Flight safety system test plans and procedures.* An applicant's safety review document must contain test plans that satisfy § 415.119(k) and the flight safety system testing requirements in subpart D and appendix E of part 417 of this chapter for all flight safety system testing. An applicant's safety review document must contain a list of all flight termination system test procedures and a synopsis of the procedures that demonstrates how they meet the testing requirements of part 417. The list must reference each procedure by title, any document number, and date.

(e) *Test reports.* An applicant's safety review document must contain test reports, prepared in accordance with § 417.315(f) and § 417.325(d) of this chapter, for each flight safety system test completed at the time of license application. An applicant shall submit any remaining test reports before flight in accordance with § 417.315(f) and § 417.325(d) of this chapter.

(f) *Reuse of flight termination system components.* For any flight termination system component to be used for more than one flight, an applicant's safety review document must contain a reuse qualification test, refurbishment plan, and acceptance test plan. This test plan must define the applicant's process for demonstrating that the component can function without degradation in performance when subjected to the qualification test environmental levels plus the total number of exposures to the maximum expected environmental levels for each of the flights to be flown.

§ 415.131 Flight safety system crew data.

(a) An applicant's safety review document must identify each flight safety system crew position and the role of that crewmember during launch processing and flight of a launch vehicle.

(b) An applicant's safety review document must identify the senior flight safety official by name and demonstrate that this individual's qualifications comply with the requirements of § 417.331 of this chapter.

(c) An applicant's safety review document must describe the certification and training program for flight safety system crewmembers established to ensure compliance with § 417.105 and § 417.331 of this chapter.

9. Appendixes B and C to part 415 are added to read as follows:

Appendix B to Part 415—Safety Review Document Outline

This appendix contains the format and numbering scheme for a safety review document to be submitted as part of an application for a launch license. Administrative requirements applicable to a safety review document are provided in § 415.107. Requirements for the form and content of each part of a safety review document are provided in parts 413 and 415 of this chapter. Technical requirements related to the information contained in a safety review document are provided in part 417 of this chapter. The applicable sections of parts 413, 415, and 417 of this chapter are referenced in the outline below.

Safety Review Document

1.0 Launch Description (§ 415.109)

1.1 Purpose
1.2 Launch Schedule
1.3 Launch Site Description
1.4 Launch Vehicle Description
1.5 Payload Description
1.6 Trajectory
1.7 Staging Events
1.8 Vehicle Performance Graphs
1.9 Unguided Suborbital Rocket Design Configuration

2.0 Launch Operator Information (§ 415.111)

2.1 Launch Operator Administrative Information (§ 415.111 and § 413.7)
2.2 Launch Operator Organization (§ 415.111 and § 417.103)
2.2.1 Organization Summary
2.2.3 Organization Charts
2.2.4 Office Descriptions and Safety Functions

3.0 Launch Personnel Certification Program (§ 415.113 and § 417.105)

3.1 Program Summary
3.2 Program Implementation Document(s)
3.3 Table of Safety Critical Tasks Performed by Certified Personnel

4.0 Flight Safety (§ 415.115)

4.1 Initial Flight Safety Analysis
4.1.1 Flight Safety Sub-Analyses, Methods, and Assumptions
4.1.2 Sample Calculation and Products
4.1.3 Conjunction On Launch Assessment Input Data
4.1.4 Launch Specific Updates and Final Flight Safety Analysis Data
4.2 Radionuclide Data (where applicable)
4.3 Flight Safety Plan
4.3.1 Flight Safety Personnel
4.3.2 Flight Safety Rules
4.3.3 Flight Safety System Summary and Preflight Tests
4.3.4 Trajectory and Debris Dispersion Data
4.3.5 Flight Hazard Areas and Safety Clear Zones
4.3.6 Support Systems and Services
4.3.7 Flight Safety Activities
4.3.8 Unguided Suborbital Rocket Data (where applicable)

5.0 Ground Safety (§ 415.117)

5.1 Ground Safety Analysis Report
5.2 Ground Safety Plan

6.0 Launch Plans (§ 415.119 and § 417.111)

6.1 Emergency Response Plan
6.2 Accident Investigation Plan
6.3 Launch Support Equipment and Instrumentation Plan
6.4 Configuration Management and Control Plan
6.5 Communications Plan
6.6 Frequency Management Plan
6.7 Security and Hazard Area Surveillance Plan
6.8 Public Coordination Plan
6.9 Local Agreements and Plans
6.10 Test Plans
6.11 Countdown Plans
6.12 Launch Abort/Delay Recovery Plan
6.13 License Modification Plan

7.0 Launch Schedule and Points of Contact (§ 415.121)

7.1 Schedule Charts
7.2 Activity Summaries and Points-of-Contact

8.0 Computing Systems and Software (§ 415.123)

8.1 Hardware and Software Descriptions
8.2 Flow Charts and Diagrams
8.3 Logic Diagrams and Software Design Descriptions
8.4 Operator User Manuals and Documentation
8.5 Software Hazard Analyses
8.6 Software Test Plans, Test Procedures, and Test Results
8.7 Software Development Plan

9.0 Unique Safety Policies and Requirements (§ 415.125)

10.0 Flight Safety System Design and Operation Data (§ 415.127)

10.1 Flight Safety System Description
10.2 Flight Safety System Diagram
10.3 Flight Safety System Subsystem Design Information
10.4 Flight Safety System Analyses
10.5 Flight Termination System Environmental Design
10.6 Flight Safety System Compliance Matrix
10.7 Flight Termination System Installation Procedures
10.8 Tracking System Validation Procedures

11.0 Flight Safety System Test Data (§ 415.129)

11.1 Test Program Overview
11.2 Testing and Installation History
11.3 Test Levels
11.4 Test Plans, Procedures, and Reports
11.5 Testing Compliance Matrix

12.0 Flight Safety System Crew Data (§ 415.131)

12.1 Position Descriptions
12.2 Personnel Qualifications
12.3 Certification and Training Program Description

Appendix C to Part 415—Ground Safety Analysis Report

C415.1 General

(a) This appendix provides the content and format requirements for a ground safety analysis report that must be submitted to the FAA as part of a launch license application in accordance with § 415.117. An applicant shall perform a ground safety analysis in accordance with subpart E of part 417 of this chapter and submit a ground safety analysis report in accordance with this appendix.

(b) A ground safety analysis report must contain hazard analyses that describe all hazard controls, and describe a launch operator's hardware, software, and operations so that the FAA may assess the adequacy of the hazard analysis. A launch operator shall document all hazard analyses on hazard analysis forms in accordance with C415.3(d) and submit systems and operations descriptions as a separate volume of the report.

(c) A ground safety analysis report must include a table of contents and provide definitions of any acronyms and unique terms used in the report.

(d) Instead of repeating the data, a launch operator's ground safety analysis report may reference other documents submitted to the FAA that contain the information required by this appendix.

C415.3 Ground Safety Analysis Report Chapters

(a) *Introduction.* A ground safety analysis report must include an introductory chapter that describes all administrative items such as purpose, scope, safety certification of personnel who performed any part of the analysis, and any special interest items, such as high-risk situations or potential non-compliance with any applicable FAA requirement.

(b) *Launch vehicle and operations summary.* A ground safety analysis report must include a chapter that provides general safety information about the vehicle and operations, including the payload and flight termination system. This chapter must serve as an executive summary of detailed information contained within the report.

(c) *Systems, subsystems, and operations information.* A ground safety analysis report must include a chapter that provides detailed safety information about each launch vehicle system, subsystem and operation and any associated interfaces. The data in this chapter must be in accordance with the following:

(1) *Introduction.* A launch operator's ground safety analysis report must contain an introduction to its systems, subsystems, and operations information that serves as a roadmap and checklist to ensure all applicable items are covered. All flight and ground hardware must be identified with a reference to where the items are discussed in the document. All interfacing hardware and operations must be identified with a reference to where the items are discussed in the document. The introduction must identify interfaces between systems and operations and the boundaries that describe a system or operation.

(2) *Subsystem description.* For each hardware system identified in a ground safety analysis report as falling under one of the hazardous systems listed in paragraphs (c)(3), (c)(4) and (c)(5) of this section, the report must identify each of the hardware system's subsystems. A ground safety analysis report must describe each hazardous subsystem in accordance with the following format:

(i) General description, including nomenclature, function, and a pictorial overview ;

(ii) Technical operating description, including text and figures describing how a subsystem works and any safety features and fault tolerance levels;

(iii) Safety critical parameters, including those that demonstrate implemented system safety approaches that are not evident in the technical operating description or figures, such as factors of safety for structures and pressure vessels;

(iv) Major components including any part of a subsystem that must be technically described in order to understand the subsystem hazards. For a complex subsystem such as a propulsion subsystem, a majority of the detail, including any figures shall be provided at the major component level such as tanks, engines and vents. The presentation of figures in the report shall progress in detail from broad overviews to narrowly focused figures. Each figure must have supporting text that explains what the figure is intended to illustrate;

(v) Ground operations and interfaces including interfaces with other launch vehicle and launch site subsystems. A ground safety analysis report must identify a launch operator's hazard controls for all operations that are potentially hazardous to the public. The report must contain facility figures that illustrate where hazardous operations take place and must identify all areas where controlled access is employed as a hazard control; and

(vi) Hazard analysis summary of subsystem hazards that identifies each specific hazard and the threat to public safety. This summary must provide cross-references to the hazard analysis form required in C415.3(d) and indicate the nature of the control, such as design margin, fault tolerance, or procedure.

(3) *Flight hardware.* For each stage of a launch vehicle, a ground safety analysis report must identify all flight hardware systems using the following sectional format:

(i) Structural and mechanical systems;

(ii) Ordnance systems;

(iii) Propulsion and pressure systems;

(iv) Electrical and non-ionizing radiation systems; and

(v) Ionizing radiation sources and systems.

(4) *Ground hardware.* A ground safety analysis report must identify the launch operator's ground hardware, including launch site and ground support equipment, that contains hazardous energy or materials, or that can affect flight hardware that contains hazardous energy or materials. All ground hardware shall be identified using the following sectional format:

(i) Structural and mechanical ground support and checkout systems;

(ii) Ordnance ground support and checkout systems;

(iii) Propulsion and pressure ground support and checkout systems;

(iv) Electrical and non-ionizing radiation ground support and checkout systems;

(v) Ionizing radiation ground support and checkout systems;

(vi) Hazardous materials; and

(vii) Support and checkout systems and any other safety equipment used to monitor or control a potential hazard not otherwise addressed above.

(5) *Flight safety system.* A ground safety analysis report must describe the hazards of inadvertent actuation of the launch operator's flight safety system, potential damage to the flight safety system during ground operations, and the hazard controls to be implemented.

(6) *Hazardous materials.* A ground safety analysis report must identify any hazardous materials used in the launch operator's flight and ground systems, including the quantity and location of each. A ground safety analysis report must contain a summary of the launch operator's approach for protecting the public from toxic plumes, including the all toxic concentration thresholds used to control public exposure and a description of any related local agreements. The ground safety analysis report must describe any toxic plume model used to protect public safety and contain any algorithms implemented by the model. For a launch that involves the use of any toxic propellants, the ground safety analysis report must include the products of the launch operator's toxic release hazard analysis for launch processing in accordance with paragraph I417.7(m) of appendix I of part 417 of this chapter.

(d) *Hazard analysis.* A ground safety analysis report must include a chapter containing a hazard analysis of the launch vehicle and launch vehicle processing and interfaces. The hazard analysis must identify each hazard and all hazard controls to be implemented. A ground safety analysis report must contain the results of the launch operator's hazard analysis of each system, subsystem, and operation using a standardized format that includes all of the items listed on the example hazard analysis form provided in figure C415–1 and in accordance with the following:

(1) *Introduction.* A ground safety analysis report must contain an introduction that serves as a roadmap and checklist to the launch operator's hazard analysis forms. All flight and ground hardware must be identified with a reference to where the items are discussed in the ground safety analysis report. All interfacing hardware and operations must be similarly addressed. The introduction must explain how a launch operator has chosen to present its hazard analysis in terms of hazard identification numbers as identified in figure C415–1.

(2) *Analysis.* Each hazard may be presented on a separate form or a launch operator may consolidate hazards of a specific system, subsystem, component, or operation onto a single form. There must be at least one form for each hazardous subsystem and each hazardous subsystem operation. A launch operator must state which approach it has chosen in the introduction to the hazard analysis section. Each identified hazard control must be separately tracked.

(3) *Numbering.* Each hazard analysis form shall be numbered with the applicable system or subsystem identified. Each line item on a hazard analysis form shall be numbered, with numbers and letters provided for multiple entries against an individual line item. A line item consists of a hardware or operation description and a hazard.

(4) *Hazard analysis data.* A hazard analysis form must contain or reference all information necessary to understand the relationship of a system, subsystem, component, or operation with a hazard cause, control, and verification.

(e) *Hazard analysis supporting data.* A ground safety analysis report must include data that supports the hazard analysis. If such data does not fit onto the hazard analysis form it shall be provided in a supporting data chapter. This chapter must contain a table of contents and may reference other documents that contain supporting data.

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Figure C415-1, Example Hazard Analysis Form

System/Subsystem/Operation:

HIN* Status	Hardware or Operation	Hazard and Effects	Hazard Causes	Hazard Controls	Safety Verifications
(Hazard Item Number and status: open or closed)	(Brief description of the operation or system including identification of its boundaries.)	(Description of each associated hazard. Identification and location of the public at risk and a description of the potential adverse effects on people and property.)	(Description of each event that may result in a hazard having an adverse affect on the public.)	(Description of each system design safety devices, or operational procedure to be implemented to protect the public. If there is no public hazard associated with an operation or system, the analysis must explain the basis for that conclusion.)	(The verification status of each hazard control, whether the hazard control is "open" or "closed," and identification of drawings, reports, or procedures that verify that a control is in place.)

HIN*: A Hazard Item Number (HIN) must be used to track each hazard to closure. Each HIN must be unique to a specific hazard with no duplication of HINs for the launch program. A hazard may have more than one HIN or a series of HINs. A launch operator may assign a HIN to track the status of an individual hazard cause, control, or verification. The status of each HIN entry in a hazard analysis form must be listed as either open or closed. There must be a means to track individual open items to closure for each hazard. A line must separate each HIN entry on a hazard analysis form.

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9. Revise part 417 to read as follows:

PART 417—LAUNCH SAFETY

Subpart A—General

Sec.

Subpart B—Launch Safety Requirements

Subpart C—Flight Safety Analysis

Subpart D—Flight Safety System

Subpart E—Ground Safety

Authority: 49 U.S.C. 70101–70121.

Subpart A—General

§ 417.1 Scope.

This part prescribes the responsibilities of a launch operator conducting a licensed launch of an expendable launch vehicle and the requirements with which a licensed launch operator must comply to maintain a license and conduct a launch. The safety requirements contained in this part apply to all licensed launches of expendable launch vehicles. The administrative requirements for submitting material to the FAA contained in this part apply in total to all licensed launches from a non-federal launch site. For a licensed launch from a federal launch range where there is a federal range safety organization overseeing the safety of each licensed launch, the administrative requirements contained in this part that apply to such a launch will be identified during the licensing process in accordance with subpart C of part 415 of this chapter, but may vary depending on the FAA's current baseline assessment of the federal launch range's safety process. Requirements for preparing a license application to conduct a launch, including all related policy and safety reviews and payload determinations are contained in parts 413 and 415 of this chapter.

§ 417.3 Definitions.

For the purpose of this part,

Casualty means serious injury or death.

Command control system means the portion of a flight safety system that includes all components needed to send a flight termination control signal to an onboard vehicle flight termination system. A command control system starts with flight termination activation switches at the flight safety official console and ends at each command-transmitting antenna. It includes all intermediate equipment, linkages, and software and any auxiliary transmitter stations that ensure a command signal will reach the onboard vehicle flight termination system from liftoff until the launch vehicle achieves orbit or can no longer reach a populated or other protected area.

Command destruct system means a portion of a flight termination system that includes all components on board a launch vehicle that receive a flight termination control signal and achieve destruction of the launch vehicle. A command destruct system includes all receiving antennas, receiver decoders, explosive initiating and transmission devices, safe and arm devices and ordnance necessary to achieving destruction of the launch vehicle upon receipt of a destruct command.

Conjunction on launch means the approach of a launch vehicle or any launch vehicle component or payload within 200 kilometers of a habitable orbiting object, either during the flight of an unguided suborbital rocket or during the ascent to orbit and first orbit of an orbital launch vehicle.

Countdown means the timed sequence of events that must take place to initiate flight of a launch vehicle.

Crossrange means the distance measured along a line whose direction is either 90 degrees clockwise (right crossrange) or counter-clockwise (left crossrange) to the projection of a launch vehicle's planned nominal velocity vector azimuth onto a horizontal plane tangent to the ellipsoidal Earth model at the launch vehicle's sub-vehicle point. The terms, right crossrange and left crossrange, may also be used to indicate direction.

Data loss flight time means the shortest elapsed thrusting time during which a launch vehicle can move from its normal trajectory to a condition where it is possible for the launch vehicle to endanger the public. Data loss flight times are used to determine when a launch vehicle's flight must be terminated if launch vehicle tracking data is no longer available to the flight safety official.

Destruct means the act of terminating the flight of a launch vehicle in a way that destroys the launch vehicle and disperses or expends all remaining propellant and renders remaining energy sources non-propulsive before the launch vehicle or any launch vehicle component or payload impacts the Earth's surface.

Document means, when used as a verb, to create and maintain a written record.

Downrange means the distance measured along a line whose direction is parallel to the projection of a launch vehicle's planned nominal velocity vector azimuth into a horizontal plane tangent to the ellipsoidal Earth model at the launch vehicle sub-vehicle point. The term downrange may also be used to indicate direction.

Drag impact point means a launch vehicle impact point corrected for atmospheric drag.

Dwell time means the period during which a launch vehicle impact point is over a populated or other protected area. Dwell time also means the period during which an object is subjected to a test condition.

Expendable launch vehicle means a launch vehicle whose propulsive stages are flown only once.

Family performance data means the results of launch vehicle component and system tests that represent similar characteristics for a launch vehicle component or system and is data that is continuously updated as additional samples of a given component or system are tested. Family performance data is used as a baseline for comparison to the results of subsequent tests of the given component or system.

Flight control line means a boundary used to define the region over which a launch vehicle will be allowed to fly and where any debris resulting from normal flight or any launch vehicle malfunction will be allowed to impact.

Flight safety limit means criteria that ensure that a launch vehicle's debris impact dispersion does not cross over any flight control line established for the flight.

Flight safety official means the person designated by a launch operator who monitors the flight of a launch vehicle and makes a flight termination decision when a launch vehicle failure occurs and the launch vehicle violates an established flight safety limit or other flight safety criterion.

Flight safety system means the system that provides a means of control during flight for preventing a launch vehicle and any component, including any payload, from reaching any populated or other protected area in the event of a launch vehicle failure. A flight safety system includes the hardware and software used to protect the public in the event of a launch vehicle failure and the functions of any flight safety system crew. One typical U.S. flight safety system, for example, incorporates a flight termination system, a command control system, and support systems such as tracking and telemetry.

Flight safety system crew means each of the personnel, designated by a launch operator, who operate flight safety system hardware and software. The functions of a flight safety system crew are part of the flight safety system. A flight safety system crew includes a flight safety official and the personnel who support the flight safety official during launch.

Flight termination system means all components, onboard a launch vehicle, that provide the ability to end a launch vehicle's flight in a controlled manner. A flight termination system consists of all command destruct systems, inadvertent separation destruct systems, or other systems or components that are onboard a launch vehicle and used to terminate flight.

Gate means the portion of a flight control line or other flight safety limit boundary through which a launch vehicle's tracking icon may pass without flight termination.

HTPB means hydroxy-terminated polybutadiene.

In-family means a launch vehicle component or system test result indicating that the component or system's performance conforms to the family performance data that was established by previous test results.

Inadvertent separation destruct system means an automatic destruct system that uses mechanical means to trigger the destruction of a launch vehicle stage.

Instantaneous impact point means an impact point, following thrust termination of a launch vehicle, calculated in the absence of atmospheric drag effects.

Launch area means the portion of a flight corridor defined by the flight control lines from the launch point to a point 100 nautical miles in the downrange direction.

Launch azimuth means the horizontal angular direction initially taken by a launch vehicle at liftoff, measured clockwise in degrees from true north.

Launch conductor means a person designated by a launch operator who conducts preflight launch processing, hazardous operations, systems testing, and the launch countdown. A launch conductor coordinates activities with a launch safety director and reports directly to a launch director.

Launch crew means all personnel who control the countdown and flight of a launch vehicle or who make irrevocable operational decisions that have the potential for impacting public safety. A launch crew includes, but is not limited to, members of the flight safety system crew.

Launch director means an internal launch operator management employee who ensures public safety and who has final approval authority for launch. A launch director ensures that all public safety related issues are resolved prior to flight.

Launch processing means all preflight preparation of a launch vehicle at a launch site, including buildup of the launch vehicle, integration of the payload, and fueling.

Launch safety director means a person designated by a launch operator who oversees a launch safety organization and all activities related to ensuring public safety. A launch safety director reports directly to the launch director.

Launch wait means a relatively short period of time when launch is not permitted in order to avoid a conjunction on launch or to safely accommodate temporary intrusion into a flight hazard area. Launch waits can occur within a launch window, can delay the start of a launch window, or terminate a launch window early.

Launch window means a period of time during which the flight of a launch vehicle may be initiated.

Nominal means in reference to launch vehicle performance, trajectory, or stage impact point, a launch vehicle flight where all vehicle aerodynamic parameters are as expected, all vehicle internal and external systems perform exactly as planned, and there are no external perturbing influences other than atmospheric drag and gravity.

Non-operating environment means an environment that a launch vehicle component experiences before flight and when not otherwise being subjected to acceptance tests. Non-operating environments include, but need not be limited to, storage, transportation, and installation.

Operating environment means an environment that a launch vehicle component will experience during acceptance testing, launch countdown, and flight. Operating environments include shock, vibration, thermal cycle, acceleration, humidity, and thermal vacuum.

Operating life means, for a flight safety system component, the period of time beginning with activation of the component or installation of the component on a launch vehicle, whichever is earlier, for which the component is capable of satisfying all its performance specifications through the end of flight.

Operation hazard means a hazard derived from an unsafe condition created by a system or operating environment or by an unsafe act.

Out-of-family means a component or system test result where the component or system's performance does not conform to the family performance data that was established by previous test results and is an indication of a potential problem with the component or system requiring further investigation and corrective action.

Passive component means a flight termination system component that does not contain active electronic piece parts such as microcircuits, transistors, and diodes. Passive components include, but need not be limited to, radio frequency antennas, radio frequency couplers, and cables and rechargeable batteries, such as nickel cadmium batteries.

PBAN means polybutadiene-acrylic acid-acrylonitrile terpolymer.

Performance specification means a statement prescribing the particulars of how a component or part is expected to perform in relation to the system that contains the component or part. A performance specification includes specific values for range of operation, input, output, or other parameters that define the component's or part's expected performance.

Populated area means an outdoor location, structure, or cluster of structures that may be occupied by people. Sections of roadways and waterways that are frequented by automobile and boat traffic are populated areas. Agricultural lands, if routinely occupied by field workers, are also populated areas.

Protected area means a populated or other area not controlled by a launch operator that is not evacuated during flight and that must, in order to protect the public, be protected from the effects of nominal and non-nominal launch vehicle flight.

Public safety means, for a particular licensed launch, the safety of people and property that are not involved in supporting the launch and includes those people and property that may be located within the boundary of a launch site, such as, visitors, individuals providing goods or services not related to launch processing or flight, and any other launch operator and its personnel.

Safety critical means essential to safe performance or operation. A safety critical system, subsystem, component, condition, event, operation, process, or item is one whose proper recognition, control, performance, or tolerance is essential to ensuring public safety. A safety critical item may create a safety hazard or provide protection from a safety hazard.

Serious injury means any injury which: (1) Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than five percent of the body surface.

Service life means, for a flight termination system component, the sum total of the component's storage life and operating life.

Sigma means standard deviation.

Storage life means, for a flight termination system component, the period of time after manufacturing of the component is complete until the component is activated or installed on a launch vehicle, whichever is earlier, during which the component may be subjected to storage environments and must remain capable of satisfying all its performance specifications.

Sub-vehicle point means the location on the ellipsoidal Earth model where the normal to the ellipsoid passes through the launch vehicle's center of gravity. The term is the same as the weapon system term ''sub-missile point.''

System hazard means a hazard associated with a hardware system and that generally exist even when no operation is occurring. System hazards that may be found at a launch site include, but are not limited to, explosives and other ordnance, solid and liquid propellants, toxic and radioactive materials, asphyxiants, cryogens, and high pressure.

Tracking icon means the representation of a launch vehicle's present position displayed to a flight safety official at the flight safety official's console during real-time tracking of the launch vehicle's flight.

Uprange means the distance measured along a line that is 180 degrees to the downrange direction. The term uprange may also be used to indicate direction.

§ 417.5 Launch safety responsibility.

A launch operator shall safely conduct a licensed launch in accordance with § 415.71 of this chapter. A launch operator shall conduct the flight of a launch vehicle from any launch site in accordance with the requirements of part 415 of this chapter and this part.

§ 417.7 Launch site responsibility.

A launch operator shall ensure the safe conduct of launch processing at a launch site in the United States in accordance with the requirements of this part 417. Launch processing at a launch site outside the United States may be subject to the requirements of the governing jurisdiction. Requirements that apply to a launch site operator are contained in part 420 of this chapter. A launch operator shall coordinate and perform launch processing in accordance with any local agreements designed to ensure that the responsibilities and requirements in this part and part 420 of this chapter are met. Where there is a licensed launch site operator, a launch operator licensee shall ensure that its operations are conducted in accordance with any agreements that the launch site operator has with any federal and local authorities pursuant to part 420 of this chapter. A licensed launch operator shall coordinate with the launch site operator and provide the launch site operator any information on its activities and potential hazards necessary for the launch site operator to determine how to protect any other launch operators and persons and their property at the launch site in accordance with the launch site operator's obligations under 14 CFR 420.55. For a launch that is conducted from an exclusive use site where there is no licensed launch site operator, the launch licensee shall satisfy the requirements of this part and the public safety requirements of part 420 of this chapter.

§ 417.9 Safety review document and launch specific updates.

(a) *General.* A launch operator shall conduct each launch in accordance with a safety review document developed in accordance with part 415 of this chapter and maintained and updated for each launch in accordance with the requirements of this part. A launch operator shall submit launch specific updates required by this part and any required by the terms of the launch operator's license. A launch specific update must be submitted to the FAA to allow for review and determination prior to the associated scheduled activity. Any change to the information in a licensee's safety review document that is not identified as a launch specific update must be submitted to the FAA as a request for license modification in accordance with § 415.73 of this chapter and the license modification plan required by § 415.119(n) of this chapter. A launch operator must obtain FAA approval of any license modification before flight.

(b) *Launch specific updates.* For each launch, a launch operator's launch specific updates shall include, but need not be limited to, the following:

(1) *Launch schedule and points of contact.* A launch operator shall conduct a launch in accordance with the launch schedule submitted during the licensing process in accordance with § 415.121 of this chapter and as updated for each launch. For each launch, a launch operator shall submit an updated launch schedule and points of contact no later than six months before flight. A launch operator shall immediately submit any later change to ensure that the FAA has the most current data.

(2) *Flight safety system test schedule.* A launch operator shall test its flight safety system in accordance with the flight safety system test schedule submitted during the licensing process in accordance with § 415.129(c) of this chapter and as updated for each launch. For each launch, a launch operator shall submit an updated flight safety system test schedule and points of contact no later than six months before flight. A launch operator shall immediately submit any subsequent change to ensure that the FAA has the most current data.

(3) *Launch operator organization.* A launch operator shall submit updated organization data no later than six months prior to flight in accordance with § 417.103(a).

(4) *Launch plans.* A launch operator shall submit any changes or additions to its flight safety plan, ground safety plan, or other launch plans to the FAA no later than 15 days before the associated activity is to take place in accordance with § 417.111(b).

(5) *Six-month flight safety analysis.* A launch operator shall perform flight safety analysis for each launch and submit launch specific analysis products to the FAA no later than six months prior to the date of each planned flight in accordance with § 417.203(c)(2).

(6) *Thirty-day flight safety analysis update.* A launch operator shall submit updated flight safety analysis products for each launch no later than 30 days prior to flight in accordance with § 417.203(c)(3).

(7) *Flight termination system qualification test reports.* A launch operator shall submit all flight termination system qualification test reports to the FAA no later than six months prior to the first flight attempt in accordance with § 417.315(f)(1).

(8) *Flight termination system acceptance and age surveillance test report summaries.* A launch operator

shall submit a summary of the results of each flight termination system acceptance and age surveillance test no later than 30 days prior to the first flight attempt for each launch in accordance with § 417.315(f)(2).

(9) *Command control system acceptance test reports.* A launch operator shall submit all command control system acceptance test reports to the FAA no later than 30 days prior to the first flight attempt in accordance with § 417.325(d).

(10) *Ground safety plan.* A launch operator shall keep current its ground safety plan for each launch and shall submit any change to the FAA no later than 15 days before the change is implemented in accordance with § 417.403(c).

§ 417.11 License flight readiness.

(a) For each launch, a launch operator shall verify that the launch is conducted in accordance with the terms and conditions of the launch license and the requirements of this part.

(b) For each launch, a launch operator shall verify that all license related information submitted to the FAA in accordance with the terms and conditions of the launch license and the requirements of this part reflects the current status of each of the licensee's systems and processes as they are implemented for that launch.

(c) For each launch, a launch operator shall submit a signed written statement in accordance with the signature requirements in § 413.7 of this chapter, that the launch is being conducted in accordance with the terms and conditions of the launch license and FAA regulations. The launch operator must state in writing that all required license related information was submitted to the FAA and that the information reflects the current status of the licensee's systems and processes as they are being implemented for that launch. The launch operator shall submit this written statement to the FAA no later than ten days before the first planned flight attempt for each launch.

(d) The FAA will evaluate each planned launch for compliance with the terms and conditions of the launch license and FAA regulations. The FAA will notify a launch operator of any licensing issue and coordinate with the launch operator to resolve any issue prior to flight. A launch operator shall not proceed with the flight of a launch vehicle if there is any licensing issue that has not been resolved.

(e) For each licensed launch, the launch operator shall provide the FAA with a console for monitoring the progress of the countdown and communication on all channels of the countdown communications network. The launch operator shall ensure that the FAA is polled over the communications network during the countdown to verify that the FAA has identified no issues related to the launch operator's license.

§§ 417.12–417.100 [Reserved]

Subpart B—Launch Safety Requirements

§ 417.101 Scope.

This subpart contains requirements that apply to the launch of orbital and suborbital expendable launch vehicles. This subpart provides an overview of the public safety issues that a launch operator's launch safety program must address. For each public safety issue, this subpart provides either the applicable requirements in their entirety or an overview of the requirements and references other subparts, sections, or appendices that contain additional requirements.

§ 417.103 Launch operator organization.

(a) For each launch, a launch operator shall establish and maintain an organization that ensures public safety and that the requirements of this part are satisfied. Each launch management position and organizational element must have documented roles, duties, and authorities. Any change in a licensee's organization from the data that was provided during the licensing process must provide for an equivalent level of safety. For each launch a launch operator shall submit updated organization data no later than six months prior to flight. A launch operator shall immediately submit any later change to ensure that the FAA has the most current data as the date of the planned flight approaches.

(b) A launch operator's organization must include, but need not be limited to, the following launch management positions and organizational elements:

(1) *Launch director.* A launch operator shall designate as launch director the launch operator employee who has the launch operator's final approval authority for launch. The launch director shall ensure public safety and shall ensure that all of the launch safety director's concerns are resolved prior to flight.

(2) *Launch safety director.* A launch operator shall designate an official who oversees its launch safety organization and all activities related to ensuring public safety. A launch safety director shall report directly to the launch director.

(3) *Launch conductor.* A launch operator shall designate an official who conducts preflight launch processing, hazardous operations, systems testing, and countdown. A launch conductor shall coordinate activities with the launch safety director and shall report directly to the launch director.

(4) *Flight safety organization.* For a launch using a flight safety system, a launch operator shall establish an organization that performs and documents the flight safety analysis required by subpart C of this part and ensures compliance with the flight safety system requirements of subpart D, including the flight safety system crew requirements of § 417.331. For launch of a unguided suborbital rocket that uses a wind weighting safety system, a launch operator shall establish an organization that ensures compliance with the flight safety analysis required by subpart C of this part and the flight safety and personnel requirements of § 417.125(g).

(5) *Ground safety organization.* A launch operator shall establish an organization that ensures compliance with the ground safety analysis and program requirements of subpart E of this part.

(6) Launch processing. A launch operator shall establish organizational elements that implement launch plans in accordance with § 417.111 and accomplish the tests, reviews, rehearsals, and safety critical operations required by §§ 417.115, 417.117, 417.119, and 417.121.

§ 417.105 Launch personnel qualifications and certification.

(a) *General.* A launch operator shall establish and document the qualifications, including education, experience, and training, for each launch personnel position that oversees, performs, or supports a hazardous operation with the potential to adversely affect public safety or who uses or maintains safety critical systems or equipment that protect the public. A launch operator shall implement a certification program that ensures that personnel possess the qualifications for their assigned tasks. These personnel positions include, but need not be limited to, those listed in § 417.103(b). Flight safety system crew qualification requirements for a launch using a flight safety system are provided in § 417.331.

(b) *Personnel certification program.* A launch operator's personnel certification program must include, but need not be limited to, the following:

(1) For each hazardous operation or safety critical system or equipment, a launch operator shall designate an individual by position who reviews

personnel qualifications and issues certifications for demonstrated knowledge, skill and competence to perform safety related tasks.

(2) Re-certification of personnel shall be performed annually or for each launch if the time period between each launch is greater than one year. Re-certification procedures shall be established and followed by the certifying organization, and shall include, but need not be limited to, a review of an individual's work record and current job knowledge and skill requirements, determination of the need for additional training, and completion of additional training where needed.

(3) A launch operator shall revoke individual certifications for negligence or failure to satisfy certification or re-certification requirements.

(4) A launch operator shall maintain qualification and certification records for each individual performing safety-related functions.

§ 417.107 Flight safety.

(a) *Flight safety system.* For each launch, a launch operator shall employ a flight safety system that provides a means of control during flight for preventing a launch vehicle and any component, including any payload, from reaching any populated or other protected area in the event of a launch vehicle failure. For each launch vehicle, vehicle component, and payload, a launch operator shall employ a flight safety system that satisfies all the functional, design, and test requirements of subpart D of this part unless one of the following exceptions applies:

(1) A launch operator need not employ a flight safety system if the launch vehicle, vehicle component, or payload does not have sufficient energy at any time during flight to reach any protected area.

(2) A launch operator need not employ a flight safety system if the launch vehicle is a suborbital rocket that does not employ a guidance system for directional control and the launch operator demonstrates that the launch will be conducted safely using a wind weighting safety system in accordance with § 417.125.

(3) A launch operator's flight safety system must satisfy all the functional, design, and test requirements of subpart D of this part unless the FAA approves the use of an alternate flight safety system through the licensing process. The FAA will approve the use of an alternate flight safety system that does not satisfy all of subpart D of this part if a launch operator demonstrates clearly and convincingly that the proposed launch achieves a level of safety that is equivalent to satisfying all the requirements of this subpart and subpart D of this part. The following apply when a launch operator seeks FAA approval for such a launch:

(i) The launch operator shall demonstrate that the launch presents significantly less public risk than the risk criteria required by paragraph (b) of this section. The reduced level of public risk must correspond to the reduced capabilities of the proposed alternate flight safety system. To achieve the reduced level of public risk, the launch must take place from a remote launch site with an absence of population and any overflight of a populated area must take place only in the later stages of flight.

(ii) The launch operator shall demonstrate the reliability of the proposed alternate flight safety system to perform its intended functions. An alternate flight safety system that does not possess all the functional capabilities required by subpart D of this part must perform its intended functions with a reliability that is comparable to that required by subpart D of this part. A launch operator shall demonstrate the reliability of a proposed alternate flight safety system through analysis, testing, and use.

(iii) The launch operator shall provide all flight safety system data required by § 415.127 of this chapter during the licensing process that is applicable to the proposed alternate flight safety system. The launch operator shall identify the similarities and differences between the design and operation of the proposed alternate flight safety system and the requirements of subpart D of this part. The launch operator shall provide an evaluation of how each difference from the requirements of subpart D of this part affects the overall safety achieved for the proposed launch.

(iv) The FAA may identify and impose additional design, test, and operational requirements for an alternate flight safety system as necessary to achieve an equivalent level of safety.

(v) A launch operator shall obtain FAA approval of any proposed alternate flight safety system that does not satisfy all of subpart D of this part before its license application or application for license modification will be found sufficiently complete to initiate review pursuant to § 413.11 of this chapter.

(b) *Public risk criteria.* A launch operator shall conduct all licensed launches in accordance with the following public risk criteria:

(1) A launch operator shall initiate flight only if the risk to the public due to all hazards associated with the flight does not exceed an expected average number of 0.00003 casualties (E_C) per launch ($E_C \leq 30\times10^{-6}$), excluding water-borne vessels and aircraft. A launch operator shall determine the risk to the public from liftoff through orbital insertion for an orbital launch vehicle, and through final stage impact for a suborbital launch vehicle. A launch operator's determination of E_C for a launch shall account for, but need not be limited to, risk due to impacting debris determined in accordance with § 417.227 and any risk determined for toxic release and distant focus overpressure blast in accordance with § 417.229 and § 417.231, respectively.

(2) A launch operator shall initiate flight only if the risk to any individual member of the public does not exceed a casualty probability (P_C) of 0.000001 per launch ($P_C \leq 1\times10^{-6}$). A launch operator shall define an individual casualty contour in accordance with § 417.225, such that if a single person were present inside that contour at the time of liftoff, the $P_c \leq 1\times10^{-6}$ criteria would be exceeded. A launch operator shall treat an individual casualty contour as a safety clear zone and ensure that no member of the public is present within the contour during the flight of a launch vehicle.

(3) A launch operator shall initiate flight only if the collective risk to any water-borne vessel that is not operated in direct support of the launch does not exceed a probability of impact (P_i) of 0.00001 ($P_i \leq 1\times10^{-5}$) during launch vehicle flight. To ensure that this criterion is not exceeded, a launch operator shall establish each ship impact hazard area in accordance with § 417.225(g), § 417.225(i), § 417.235(c), and appendixes A and C of this part.

(4) A launch operator shall initiate flight only if the individual risk to an aircraft not operated in direct support of the launch does not exceed a probability of impact of 0.00000001 ($P_i \leq 1\times10^{-8}$). To ensure that this criterion is not exceeded, a launch operator shall establish each aircraft impact hazard area in accordance with § 417.225(g), § 417.225(i), § 417.235(c), and appendixes A and C of this part.

(c) *Conjunction on launch assessment.* A launch operator shall ensure that a launch vehicle, any jettisoned components, and its payload do not pass closer than 200 kilometers to a habitable orbital object throughout a sub-orbital launch. For an orbital launch, a launch operator shall ensure that a launch vehicle, any jettisoned components, and its payload do not pass closer than 200 kilometers to a habitable orbiting object during ascent to initial orbital insertion through at least one complete orbit. A launch operator shall obtain a conjunction on launch assessment from United States Space Command in accordance with § 417.233 and shall use the results to develop flight commit criteria for collision avoidance in accordance with § 417.113(b).

(d) *Flight safety analysis.* A launch operator shall perform and document flight safety analysis in accordance with subpart C of this part. The analysis must demonstrate compliance with the public risk criteria of paragraph (b) of this section and establish flight safety limits for each launch. The flight of a launch operator's launch vehicle shall take place in accordance with the flight safety limits established pursuant to subpart C of this part. A launch operator shall use the analysis products to develop flight safety rules that govern a launch as required by § 417.113.

(e) *Radionuclides.* For launch of any radionuclide, a launch operator must, through the licensing process and in accordance with § 415.115(c) of this chapter, demonstrate clearly and convincingly that any such launch would be consistent with public health and safety. The FAA will evaluate launch of any radionuclide on a case-by-case basis, and issue an approval if the FAA finds that the launch is consistent with public health and safety.

(f) *Flight safety plan.* A launch operator shall conduct each launch in accordance with its flight safety plan that was prepared during the licensing process in accordance with § 415.115 of this chapter and updated for each launch in accordance with the launch plan requirements of § 417.111 of this chapter.

§ 417.109 Ground safety.

(a) FAA requirements for ground safety apply to launch processing at a launch site in the United States. Launch processing at a launch site outside the United States may be subject to the requirements of the governing jurisdiction.

(b) A launch operator shall protect the public from any hazards presented by operations and support systems at a launch site that are used in preparing a launch vehicle for flight. A launch operator shall perform a ground safety analysis and conduct each launch in accordance with a ground safety plan designed to protect the public from any adverse effects of preparing a launch vehicle for flight. Specific ground safety requirements that must be met by a launch operator are provided in subpart E of this part.

§ 417.111 Launch plans.

(a) A launch operator shall implement a flight safety plan, a ground safety plan, and additional written launch plans that define how launch processing and flight of a launch vehicle will be conducted without adversely affecting public safety and how to respond to accidents and other unplanned emergencies.

(b) A launch operator shall update its flight safety plan, ground safety plan, and the additional launch plans that were prepared during the licensing process in accordance with §§ 415.115, 415.117 and 415.119 of this chapter for each specific launch. A launch operator shall submit any launch plan changes or additions to the FAA no later than 15 days before the associated activity is to take place. If a change involves the addition of a new public hazard or the elimination of any control for a previously identified public hazard, a launch operator licensee shall submit a license modification request in accordance with § 415.73 and the license modification plan required by § 415.119(n) of this chapter.

(c) A launch operator shall ensure that its activities are conducted in accordance with the public safety and environmental plans and agreements of any launch site operator for the launch site from which a launch operator launches.

§ 417.113 Launch safety rules.

(a) *General.* A launch operator shall implement written safety rules that govern launch processing and flight of a launch vehicle. These launch safety rules must identify the environmental conditions and status of the launch vehicle, launch support equipment, and personnel under which launch processing and flight may be conducted without adversely affecting public safety. Launch rules must include flight safety rules that govern the flight of a launch vehicle and ground safety rules to be followed for each preflight ground operation at a launch site that has the potential to adversely affect public safety. Launch safety rules must be documented in a launch operator's launch plans. A launch operator's launch safety rules shall include those rules required by this section and any launch safety rules unique to a planned launch based on the launch operator's flight and ground safety analyses.

(b) *Flight commit criteria.* For each launch, a launch operator shall implement written flight commit criteria that identify the conditions that must be met to initiate flight. For each launch a launch operator shall document the actual conditions at the time of liftoff indicating that the flight commit criteria have been met. A launch operator's flight commit criteria must provide for:

(1) Assurance that the time of liftoff will be such that a launch vehicle's planned trajectory will avoid habitable spacecraft in Earth orbit in accordance with § 417.107 and the results of the conjunction on launch assessment required in § 417.233.

(2) Surveillance of established hazard areas and any aircraft and ship traffic to verify that any exposure to the public satisfies the public safety criteria of § 417.107 as determined by a flight hazard area analysis performed in accordance with § 417.225.

(3) Verification that any local agreements created pursuant to § 417.7 and § 417.121(e) have been satisfied.

(4) Verification that any flight safety system is available and operational, including all required equipment and personnel.

(5) Verification that flight day meteorological conditions, such as wind, lightning, and visibility, are within required limits defined by a flight safety analysis performed in accordance with subpart C of this part. If the flight day conditions violate the meteorological limits, flight must not be initiated unless an updated analysis is performed and shows that the public risk criteria in § 417.107(b) can be met under the existing conditions. For a launch vehicle flown with a flight safety system, a launch operator shall implement weather constraints designed to avoid natural lightning strikes and lightning triggered by the flight of the launch vehicle. A launch operator's flight safety rules must include the lightning related weather constraints provided in appendix G of this part unless otherwise approved by the FAA during the licensing process based on applicability to each planned launch.

(c) *Flight termination rules.* For a launch vehicle flown with a flight safety system, a launch operator shall implement a set of written rules that specify the conditions under which flight termination shall be initiated to ensure public safety. Flight termination rules must include, but need not be limited to the following:

(1) Flight must be terminated when valid data indicate that the launch vehicle has violated a flight safety limit established by a flight safety analysis performed in accordance with § 417.213. This shall be accomplished by monitoring real-time launch vehicle flight status parameters (such as debris footprint, instantaneous impact point, or vehicle present position and velocity vector flight angles) using the flight safety data processing system and the flight safety official console in

accordance with § 417.327(f) and § 417.327(g), respectively, and initiating flight termination when a flight status parameter reaches a pre-defined flight safety limit.

(2) Flight must be terminated at the straight up time established in accordance with § 417.215 if the launch vehicle continues to fly a straight up trajectory and, therefore, does not turn downrange when it should.

(3) Flight must be terminated when real-time data provide grounds for concluding that the performance of the launch vehicle is erratic and the potential exists for the loss of flight safety system control of the launch vehicle when further flight is likely to violate the established safety criteria.

(4) A launch operator shall establish flight termination rules that apply the data loss flight times, earliest destruct time, and no longer endanger time determined in accordance with § 417.221. These flight termination rules must satisfy the following:

(i) Flight must be terminated no later than the earliest destruct time if tracking of the launch vehicle is not established and vehicle position and status data is not available to the flight safety official by the earliest destruct time.

(ii) Once launch vehicle tracking is established, if there is a loss of tracking data before the no longer endanger time and tracking data is not re-established, flight must be terminated no later than the expiration of the data loss flight time for the point in flight that the data was lost.

(5) In order to permit its launch vehicle to traverse a ''gate'' established in accordance with § 417.219, a launch operator shall verify that the launch vehicle is performing normally and shows no indication that the launch vehicle's performance will deviate from normal performance. If a launch vehicle is not performing normally immediately prior to entering a gate, the launch operator shall terminate flight. Once the launch vehicle has successfully traversed a gate, a launch operator shall not terminate flight while the launch vehicle's debris impact dispersion is over a populated or other protected area.

(d) *Launch crew work shift and rest rules.* A launch operator shall implement written rules governing the maximum length of work shifts and the amount of rest that must be afforded a launch crew. A launch operator's launch crew work shift and rest policies must provide for the following for any operation with the potential to have an adverse effect on public safety:

(1) Maximum 12-hour work shift with at least 8 hours of rest after 12 hours of work. The 8 hours of rest must be in addition to the round trip travel time between work and home or living quarters.

(2) Maximum 60 hours worked in the preceding 7 days.

(3) Maximum of 14 consecutive work days.

(4) No more than five consecutive 12-hour work shifts shall be scheduled without a 48-hour rest period.

§ 417.115 Tests.

(a) *General.* A launch operator shall test all flight and ground systems and equipment that protect the public from any adverse effect of a launch in accordance with its test plans and procedures prepared during the licensing process in accordance with part 415, subpart F of this chapter and updated for each launch in accordance with § 417.111. A launch operator shall coordinate test plans and all associated test procedures with any launch site operator or other local entity associated with the operation. A launch operator shall determine the cause of any discrepancy identified during testing, develop and implement all corrective actions, and perform re-testing to verify each correction. A launch operator shall notify the FAA, including any onsite FAA inspector, of any discrepancy identified during testing and submit information on corrections implemented and the results of re-testing before the system or equipment is used in support of a launch.

(b) *Flight safety system testing.* A launch operator shall test any flight safety system and all flight safety system components, including any onboard launch vehicle flight termination system, command control system, and support system, in accordance with the test requirements of subpart D of this part.

(c) *Ground system testing.* A launch operator shall meet the test requirements of paragraph (a) of this section for any system or equipment used to support hazardous ground operations identified by the ground safety analysis required by § 417.405.

(d) *Communications systems testing.* A launch operator shall meet the test requirements of paragraph (a) of this section for any communication system used for voice, video, or data transmission that support a flight safety system or any other communication system that is used for a launch.

§ 417.117 Reviews.

(a) *General.* A launch operator shall conduct meetings to review the status of operations, systems, equipment, and personnel required by this part 417. A launch operator shall implement its launch processing schedule submitted at the time of license application according to § 415.121 of this chapter and updated in accordance with § 417.9, which identifies each review to be conducted and when it is to be conducted, referenced to the planned liftoff. A launch operator shall maintain documented criteria for successful completion of each review. A launch operator shall document all review proceedings. Any corrective actions identified during a review shall be tracked to completion and documented. Launch operator personnel who oversee a review shall attest to successful completion of the review's criteria in writing. Reviews conducted by a launch operator for each launch shall include, but need not be limited to those identified in this section.

(b) *Hazardous operations safety readiness reviews.* A launch operator shall conduct a review prior to performing any hazardous operation with the potential to adversely effect public safety. The review must determine the launch operator's readiness to perform the operation and ensure that safety provisions are in place. The review must determine the readiness status of safety systems and equipment and verify that the personnel involved satisfy certification and training requirements.

(c) *Flight termination system design review.* A launch operator shall conduct a review of any onboard vehicle flight termination system and all components to ensure the design requirements have been satisfied and that the system components are ready for qualification testing in accordance with subpart D of this part.

(d) *Flight safety analysis review.* A launch operator shall conduct a flight safety analysis review to ensure that each analysis method used satisfies subpart C of this part and that the results are correct for each launch. A flight safety analysis review shall be conducted to allow any corrective actions to be completed before the launch safety review required in paragraph (f) of this section. The person who prepares the analysis must not conduct its review.

(e) *Ground safety analysis review.* A launch operator shall conduct a review of the ground safety analysis required by subpart E of this part and the status of ground safety systems, plans, procedures, and personnel that ensure public safety during ground operations. This review must be conducted in coordination with any launch site operator. A ground safety review must be successfully completed before ground operations begin at a launch site for each launch.

(f) *Launch safety review.* For each launch, a launch operator shall conduct a launch safety review no later than 15 days prior to the planned flight day. This review must determine the readiness of ground and flight safety systems, safety equipment, and safety personnel to support a flight attempt. Successful completion of a launch safety review must ensure, but need not be limited to, satisfaction of the following criteria:

(1) Verification that all safety requirements have been or will be satisfied before flight. All safety related action items must be resolved.

(2) Flight safety personnel must be assigned and certified in accordance with § 417.105.

(3) The flight safety rules and flight safety plan must incorporate a final flight safety analysis in accordance with subpart C of this part.

(4) A ground safety analysis must be complete in accordance with subpart E of this part and the results must be incorporated into the ground safety plan. The launch operator shall verify, at the time of the review, that the ground safety systems and personnel satisfy or will satisfy all requirements of the ground safety plan for support of flight.

(5) Safety related coordination with any launch site operator or local authorities must be accomplished in accordance with local agreements.

(6) A licensee shall verify that all safety related information for a specific launch has been submitted to the FAA in accordance with FAA regulations and any special terms of a license. A licensee shall verify that information submitted to the FAA reflects the current status of safety-related systems and processes for each specific launch. A licensee shall document this verification as part of the launch license readiness statement to the FAA in accordance with § 417.9.

(g) *Launch (flight) readiness review.* A launch operator shall conduct a launch readiness review in accordance with § 415.37 of this chapter and the requirements in this section within 48 hours of the first flight attempt. A launch director, designated in accordance with § 417.103, shall review all preflight testing and launch processing conducted up to the time of the review. The status of systems and support personnel shall be reviewed to determine readiness to proceed with launch processing and the launch countdown. A decision to proceed must be in writing and signed by the launch director and any launch site operator or federal range launch decision authority. Additional launch readiness reviews may be held at the discretion of the launch director. Information presented during a launch readiness review must address, but need not be limited to, the following:

(1) Readiness of launch vehicle and payload.

(2) Readiness of any flight safety system and personnel and the results of flight safety system testing.

(3) Readiness of all other safety-related equipment and services.

(4) Launch safety rules and launch constraints.

(5) Launch weather forecasts.

(6) Abort, hold and recycle procedures.

(7) Results of rehearsals conducted in accordance with § 417.119 of this subpart.

(8) Unresolved safety issues as of the time of the launch readiness review and plans for their resolution.

(9) Additional safety information that may be required to assess readiness for flight.

(10) Review launch failure initial response actions and investigation roles and responsibilities.

(h) *Post-launch review and report.* A launch operator shall conduct a post-launch review no later than 48 hours after completion of a launch and provide a post-launch report to the FAA no later than ten working days following completion of a launch. A launch operator shall identify any discrepancy or anomaly that occurred during the launch countdown and flight. A post-launch report must identify deviations from any term of the license or event that otherwise relate to public safety and any corrective actions to be implemented before any future launch. A post launch report must contain the results of any monitoring of flight environments performed in accordance with § 417.307(b) and any measured wind profiles used for the launch in accordance with § 417.217(d)(2). Additional post-launch review requirements that apply to launch of an unguided suborbital rocket are contained in § 417.125(j).

§ 417.119 Rehearsals.

(a) *General.* A launch operator shall rehearse the launch crew and systems to identify corrective actions needed to ensure public safety. All rehearsals shall be conducted in accordance with each of the following:

(1) A launch operator shall conduct all rehearsals in accordance with the launch processing schedule submitted at the time of license application in accordance with § 415.121 of this chapter and any launch specific updates for each launch in accordance with § 417.9.

(2) A launch operator shall assess any anomalies identified by a rehearsal, ensure any changes needed to ensure public safety are incorporated into the launch processing and flight, and ensure the rehearsal or the related part of the rehearsal is repeated until successfully completed. A launch operator shall ensure that all rehearsals are completed at least 48 hours before the first flight attempt.

(3) A launch operator shall inform the FAA of any anomalies and related changes in operations performed during launch processing or flight resulting from a rehearsal.

(4) For each launch, each person that is to participate in the launch processing or flight of a launch vehicle shall participate in at least one related rehearsal that exercises all that person's functions.

(5) A launch operator must develop and conduct the rehearsals identified in this section for each launch unless the launch operator clearly and convincingly demonstrates an equivalent level of safety through the licensing process.

(6) Each rehearsal must simulate normal and abnormal preflight and flight conditions as needed to exercise the launch operator's launch plans.

(7) Rehearsals may be conducted at the same time provided that joint rehearsals do not create hazardous conditions, such as changing a hardware configuration that affects public safety.

(b) *Countdown rehearsal.* A launch operator shall develop and conduct a rehearsal with the countdown plan, procedures, and checklist required by § 415.119(l) of this chapter and updated as needed for each launch according to § 417.111. A countdown rehearsal must familiarize launch personnel with all countdown activities, demonstrate that the planned sequence of events is correct, and demonstrate that there is adequate time allotted for each event. A launch operator shall hold a countdown rehearsal after the launch vehicle and any launch support systems are assembled into their final configuration for flight and before the launch readiness review required by § 417.117.

(c) *Launch abort or delay recovery and recycle rehearsal.* A launch operator shall conduct a rehearsal of the launch abort or delay recovery and recycle plan developed during the licensing process in accordance with § 415.119(m) of this chapter and updated as needed for each launch in accordance with § 417.111. A launch operator shall conduct this rehearsal after or in conjunction with a countdown rehearsal.

(d) *Emergency response rehearsal.* A launch operator shall conduct a rehearsal of the emergency response plan developed in accordance with § 415.119(b) of this chapter and updated as needed for each launch according to § 417.111. A launch operator shall conduct an emergency response rehearsal for a first launch, for any additional launch that involves a new safety hazard, for a launch where there is a change in emergency response personnel, or for any launch where more than a year has passed since the last rehearsal. An emergency response rehearsal shall be conducted in conjunction with a countdown rehearsal.

(e) *Communications rehearsal.* A launch operator shall ensure that each part of the communications plan developed according to § 415.119(f) of this chapter and updated as needed for each launch according to § 417.111, is rehearsed either in conjunction with another rehearsal or during a specific communications rehearsal.

§ 417.121 Safety critical preflight operations.

(a) *General.* A launch operator shall perform safety critical preflight operations that protect the public from the adverse effects of hazards associated with launch processing and flight of a launch vehicle. All safety critical preflight operations must be identified in the launch schedule submitted according to § 415.121 of this chapter. Safety critical preflight operations must include, but need not be limited to those defined in this section.

(b) *Countdown.* A launch operator shall conduct a launch countdown in accordance with a countdown plan, including procedures and checklists, developed during the licensing process according to § 415.119 of this chapter and which must be updated as needed for each specific launch according to § 417.111. A countdown plan must be disseminated to, and followed by, all personnel responsible for the countdown and flight of a launch vehicle. A countdown shall be communicated over a dedicated communications network that is controlled by a launch conductor responsible for ensuring that all countdown checklist items are successfully completed. A launch operator shall ensure that all channels of the communications network are recorded during each countdown. A launch conductor shall be in direct communication with launch support personnel and receive readiness statements when checklist events are successfully completed.

(c) *Conjunction on launch assessment.* A launch operator shall coordinate with United States Space Command to obtain a conjunction on launch assessment in accordance with § 417.233. A launch operator shall develop and incorporate flight commit criteria as required by § 417.113(b) to ensure that each launch meets the criteria of § 417.107(c).

(d) *Meteorological data.* A launch operator shall conduct operations and coordinate with weather organizations as needed to ensure accurate meteorological data is obtained to support the flight safety analysis required by subpart C of this part and to ensure compliance with the flight commit criteria developed in accordance with § 417.113.

(e) *Local notification.* A launch operator shall implement any local plans and agreements developed during the licensing process according to § 415.119 of this chapter. For a launch from a site with a licensed launch site operator, the launch operator shall coordinate as needed to ensure that the launch site operator's local plans and agreements are implemented and satisfied in accordance with part 420 of this chapter. A launch operator shall ensure the following are accomplished for each launch, either as part of its local plans and agreements or as part of any launch site operator's local plans and agreements:

(1) Any local plans and agreements shall be updated to reflect each launch.

(2) Local authorities shall be informed of designated hazard areas associated with a launch vehicle's planned trajectory and any planned impacts of flight hardware as defined by the flight safety analysis required by subpart C of this part. Notifications must be designed to ensure that the public is aware of hazard areas and when to avoid them.

(3) Any hazard area information prepared in accordance with § 417.225 or § 417.235 shall be provided to the local United States Coast Guard for dissemination to mariners.

(4) Hazard area information prepared in accordance with § 417.225 or § 417.235 for each aircraft hazard area within a flight corridor shall be provided to the FAA Air Traffic Control (ATC) office having jurisdiction over the airspace through which the launch will take place for the issuance of notices to airmen.

(5) A launch operator shall be in communication with the local Coast Guard and the FAA ATC office, either directly or through any launch site operator, to ensure that notices to airmen and mariners are issued and in effect at the time of flight.

(f) *Hazard area surveillance.* A launch operator shall implement its security and hazard area surveillance plan developed in accordance with § 415.119(h) of this chapter to ensure that the public safety criteria in § 417.107(b) are met for each launch. A launch operator shall determine any hazard areas that require surveillance in accordance with § 417.225 for an orbital launch or § 417.235 for a suborbital launch. For hazard areas requiring surveillance, a launch operator shall ensure that each hazard area is surveyed on the day of launch, and ensure that the presence of any members of the public in a surveyed hazard area is consistent with flight commit criteria developed for each launch in accordance with § 417.113. A launch operator shall verify the accuracy of any radar or other equipment used for hazard area surveillance and ensure that any inaccuracies in the surveillance system are accounted for when enforcing the flight commit criteria.

(g) *Flight safety system preflight tests.* A launch operator shall conduct preflight tests of any flight safety system in accordance with the requirements in subpart D of this part.

(h) *Launch vehicle tracking data verification.* For each launch a launch operator shall implement written procedures for verifying the accuracy of any launch vehicle tracking data provided to the flight safety official during flight. Any source of tracking data must satisfy the requirements of § 417.327(b).

(i) *Unguided suborbital rocket preflight operations.* For the launch of an unguided suborbital rocket, in addition to meeting the other requirements of this section where applicable, a launch operator shall perform the preflight wind weighting and other preflight safety operations required by § 417.125, § 417.235, and appendix C of this part.

§ 417.123 Computing systems and software.

A launch operator shall ensure that any flight and ground computing system that performs or potentially performs a software safety critical function that can affect public safety is implemented in accordance with the requirements of appendix H of this part. Software safety critical functions that apply to the launch processing and flight of a launch vehicle are defined in appendix H. A launch operator shall ensure that computing systems and software used for each launch and any process for ensuring its reliability are as represented by the computing system and software data provided to the FAA as part of the licensing process according to § 415.123 of this chapter.

§ 417.125 Launch of an unguided suborbital rocket.

(a) *General.* In addition to meeting the other requirements contained in this subpart, a launch operator shall conduct the launch of an unguided suborbital rocket in accordance with the requirements of this section.

(b) *Flight safety.* An unguided suborbital rocket shall be launched with a flight safety system in accordance with § 417.107 (a) and subpart D of this part unless one of the following exceptions applies:

(1) The unguided suborbital rocket, including any component or payload, does not have sufficient energy to reach any protected area in any direction from the launch point; or

(2) The launch operator demonstrates through the licensing process that the launch will be conducted using a wind weighting safety system that meets the requirements of paragraph (c) of this section.

(c) *Wind weighting safety system.* A launch operator's wind weighting safety system must consist of equipment, procedures, analysis and personnel functions used to determine the launcher elevation and azimuth settings that correct for the windcocking and wind drift that an unguided suborbital rocket will experience during flight due to wind effects. The launch of an unguided suborbital rocket that uses a wind weighting safety system must meet the following requirements:

(1) The unguided suborbital rocket must not contain a guidance or directional control system.

(2) The launcher azimuth and elevation settings must be wind weighted to correct for the effects of time of flight wind conditions to provide a safe impact location. The launch shall be conducted in accordance with the wind weighting analysis requirements and methods of § 417.235 and appendix C of this part.

(3) A launch operator shall use a launcher elevation angle setting that ensures the rocket will not fly uprange. A launch operator shall set the launcher elevation angle in accordance with the following:

(i) The nominal launcher elevation angle must not exceed 85°, and must be determined based on the proximity of population to the launch point.

(ii) For an unproven unguided suborbital rocket, the nominal launcher elevation angle must not exceed 80°. A proven unguided suborbital rocket is one that has demonstrated, by two or more launches, that flight performance errors are within all the three-sigma dispersion parameters modeled in the wind weighting safety system.

(iii) The launcher elevation angle setting may exceed the limits of paragraph (c)(3)(i) and (c)(3)(ii) of this section if the launch operator demonstrates, clearly and convincingly, an equivalent level of safety through the licensing process.

(iv) The launcher elevation angle setting need not be limited if the unguided suborbital rocket does not have sufficient energy for any component or payload to reach any protected area in any direction from the launch point.

(d) *Public risk criteria.* A launch operator shall conduct the launch of an unguided suborbital rocket in accordance with the public risk criteria in § 417.107(b). The casualty expectancy (E_C) determined prior to the day of flight must satisfy the public risk criteria for the area defined by the range of launch azimuths that the launch operator will use to accomplish wind weighting. After wind weighting on the day of flight, a launch operator shall initiate flight only after verifying that the wind drifted impacts of all planned impacts and their five-sigma dispersion areas satisfy the public risk criteria.

(e) *Stability.* An unguided suborbital rocket, in all configurations, must be stable in flexible body to 1.5 calibers and rigid body to 2.0 calibers throughout each stage of powered flight. An unguided suborbital rocket is considered stable if, when measured from the tip of the rocket's nose, the distance to the rocket's center of pressure is greater than the distance to the rocket's center of gravity for each rocket configuration for the duration of flight. A caliber, for a rocket configuration, is defined as the distance between the center of pressure and the center of gravity divided by the largest frontal diameter of the rocket configuration.

(f) *Flight safety analysis.* A launch operator shall ensure that a flight safety analysis is performed for each unguided suborbital rocket launch in accordance with § 417.235. The results of the flight safety analysis shall be used to establish launch safety rules, including launch commit criteria as required by § 417.113.

(g) *Flight safety personnel.* A launch operator shall ensure that all personnel involved in the launch of an unguided suborbital rocket are certified to perform their roles as required by § 417.105. The flight safety organization for the launch of an unguided suborbital rocket must include the management positions and organizational elements required by § 417.103 and the following:

(1) A flight safety official who oversees launch-day activities and ensures that all launch commit criteria are met prior to flight.

(2) A wind weighting official who uses actual measured wind data and computes launch elevation and azimuth settings that correct for the wind-cocking and wind-drift effects on an unguided suborbital rocket due to wind conditions at the time of flight. The process used by a wind weighting official must satisfy the requirements of § 417.235 and appendix C of this part.

(h) *Flight safety plan.* A launch operator shall conduct a launch in accordance with its flight safety plan developed at the time of license application according to § 415.115 of this chapter and updated for each launch according to § 417.111.

(i) *Tracking.* A launch operator shall track the flight of an unguided suborbital rocket. The tracking system must provide data to determine the actual impact locations of all stages and components, to verify the effectiveness of the launch operator's wind weighting safety system, and to obtain rocket performance data for comparison with the preflight performance predictions.

(j) *Post-launch review.* A launch operator shall ensure that the post-launch review required by § 417.117(h) includes:

(1) Actual impact location of all impacting stages and any impacting components.

(2) A comparison of actual and predicted nominal performance.

(3) Investigation results of any launch anomaly. If flight performance deviates by more than a three-sigma dispersion from the nominal trajectory, the launch operator shall conduct an investigation to determine the cause of the rocket's deviation from normal flight and take corrective action before the next launch. Any corrective actions must be submitted to the FAA as a request for license modification before the next launch in accordance with § 415.73 of this chapter and the license modification plan required by § 415.119(n) of this chapter.

§ 417.127 Unique safety policies and practices.

For each launch, a launch operator shall review operations, system designs, analysis, and testing, and identify and implement any additional policies and practices needed to protect the public. These policies and practices must ensure the safety of the public. A launch operator shall implement any launch operator unique safety policies and practices identified during the licensing process and documented in a launch operator's safety review document in accordance with § 415.125 of this chapter. For any new launch operator unique safety policy or practice or change to an existing safety policy or practice, the launch operator shall submit a request for license modification in accordance with § 415.73 of this chapter and the license modification plan required by § 415.119(n) of this chapter.

§§ 417.128—417.200 [Reserved]

Subpart C—Flight Safety Analysis

§ 417.201 Scope.

This subpart provides requirements for performing flight safety analysis in accordance with § 417.107(d) and performance standards for the analyses that a launch operator shall complete. This subpart also identifies the analysis products that a launch operator shall submit to the FAA when applying for a launch license in accordance with subpart F of part 415 of this chapter and as required by this subpart for each launch.

§ 417.203 General.

(a) *Compliance.* A launch operator shall perform flight safety analysis to demonstrate that it will monitor and control risk to the public from normal and malfunctioning launch vehicle flight in accordance with the public risk criteria of § 417.107(b) and subpart C of this part. For each launch, a licensee shall perform flight safety analysis using methods approved by the FAA during the licensing process or as a license modification. Any change to a licensee's flight safety analysis methods shall be submitted to the FAA as a request for license modification in accordance with § 415.73 of this chapter before the launch to which the proposed change applies.

(b) *Flight safety plan.* Flight safety analysis products must be incorporated in a launch operator's flight safety plan. This plan shall be prepared during the license application process in accordance with § 415.115 of this chapter and updated to incorporate final analysis products for each launch in accordance with § 417.107(d).

(c) *Submission of analysis products.* A launch operator shall perform flight safety analysis and submit analysis products for each of the analyses required by this subpart to the FAA in accordance with the following:

(1) *License application flight safety analysis.* A launch operator shall perform flight safety analysis at the time of license application and submit the analysis products required by this subpart as part of the launch operator's safety review document in accordance with § 415.115(a) of this chapter. The FAA will evaluate the submitted analysis material to determine whether a launch operator's analysis methods for each launch are in compliance with the requirements of this subpart.

(2) *Six-month flight safety analysis.* A launch operator shall perform flight safety analysis for each launch and submit launch specific analysis products to the FAA no later than six months prior to the date of each planned flight. This analysis shall be performed with vehicle and mission specific input data as intended for the planned flight. A launch operator may reference previously submitted analysis products and data that are applicable to the launch. A launch operator shall identify any analysis product that may change as a flight date approaches. A launch operator shall describe what needs to be done to finalize any analysis product and identify when it will be finalized. The launch operator shall submit the analysis products using the same format and organization as submitted during the license application process. The FAA may request the launch operator to present the six-month flight safety analysis products in a technical meeting at the FAA.

(3) *Thirty-day flight safety analysis update.* A launch operator shall perform analysis and submit updated analysis products no later than 30 days prior to flight. The analysis must account for potential variations in input data that may affect the analysis products within the final 30 days prior to flight. The launch operator shall submit the analysis products using the same format and organization employed during the license application process. A launch operator shall not change an analysis product within the final 30 days prior to flight unless the change is an enhancement to public safety and making the change is identified as part of the launch operator's flight safety analysis process approved by the FAA through the licensing process.

(d) *Applicability of analyses.* Flight safety analysis must assess the flight of a guided or unguided expendable launch vehicle, whether it uses a flight safety system or a wind weighting safety system to protect the public. The requirements for wind analysis of § 417.217, the debris risk analysis of § 417.227, the toxic release hazard analysis of § 417.229, the distant focus overpressure blast effects risk analysis of § 417.231, and the conjunction on launch assessment requirements of § 417.233 apply to all launches. The requirements in § 417.235 apply only to the flight of any unguided suborbital launch vehicle that uses a wind weighting safety system. All other analyses required by this subpart apply to the flight of any launch vehicle that uses a flight safety system to ensure public safety in accordance with § 417.107(a).

(e) *Dependent analyses.* Because some analyses required by this subpart are inherently dependent on one another, a launch operator shall ensure that each product or data output of any one analysis is compatible in form and content with the data input requirements of any other analysis that depends on that output. Figure 417.203–1 illustrates the flight safety analyses that would be performed for a typical launch that uses a flight safety system and the dependent relationships that exist between the analyses.

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Data Source Analyses (These analyses provide data to the dependent analyses indicated with an X.)	**Dependent Analyses** (These analyses use data from the data source analyses indicated as input.)											
	Trajectory Analysis (§ 417.205)	Malfunction Turn (§ 417.207)	Flight Control Lines (§ 417.211)	Flight Safety Limits (§ 417.213)	Straight Up Time (§ 417.215)	No-Longer Terminate Gate (§ 417.219)	Data Loss Flight Time (§ 417.221)	Flight Hazard Areas (§ 417.225)	Debris Risk Analysis (§ 417.227)	Toxic Release Hazard Analysis (§ 417.229)	Distant Focus Overpressure Blast (§ 417.231)	Conjunction on Launch Assessment (§ 417.233)
Trajectory Analysis (§ 417.205)		X	X	X	X	X	X	X	X	X	X	X
Malfunction Turn Analysis (§ 417.207)				X	X		X	X	X	X	X	
Debris Analysis (§ 417.209)				X	X	X	X	X	X	X	X	X
Flight Control Lines (§ 417.211)				X	X	X	X	X	X	X	X	
Flight Safety Limits (§ 417.213)						X	X		X	X	X	
Straight-Up Time (§ 417.215)										X	X	
Wind Analysis (§ 417.217)	X			X	X	X	X	X	X	X	X	
No-Longer Terminate Gate (§ 417.219)							X		X	X	X	
Data Loss Flight Times (§ 417.221)		X										
Time-Delay Analysis (§ 417.223)		X		X	X	X	X	X	X	X	X	X
Flight Hazard Areas (§ 417.225)									X			

Figure 417.203-1, Illustration of Dependent Flight Safety Analyses

(f) *Alternate analysis.* A launch operator shall meet the requirements in this subpart unless the FAA approves an alternate analysis method through the licensing process. The FAA will approve an alternate method if a launch operator provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by this subpart. A launch operator shall obtain FAA approval of an alternate method before the FAA will find the launch operator's license application or application for license modification sufficiently complete to initiate review pursuant to § 413.11 of this chapter. An alternate flight safety analysis method used by a federal launch range, that is documented and approved in the FAA baseline safety assessment of that federal launch range, is an acceptable alternate analysis method for a commercial launch from that range.

§ 417.205 Trajectory analysis.

(a) *General.* A launch operator shall perform a trajectory analysis to determine a launch vehicle's nominal trajectory and potential three-sigma trajectory dispersions about the nominal trajectory. A launch operator's trajectory analysis shall also determine, for any time after lift-off, the limits of a launch vehicle's normal flight. Normal flight is defined as a properly performing launch vehicle whose real-time instantaneous impact point does not deviate from the nominal instantaneous impact point by more than the sum of the wind effects and the three-sigma performance deviations in the uprange, downrange, left-crossrange, or right-crossrange directions. Figure 417.205–1 illustrates the nominal trajectory and the three-sigma left and right dispersed trajectories for a sample launch from Florida.

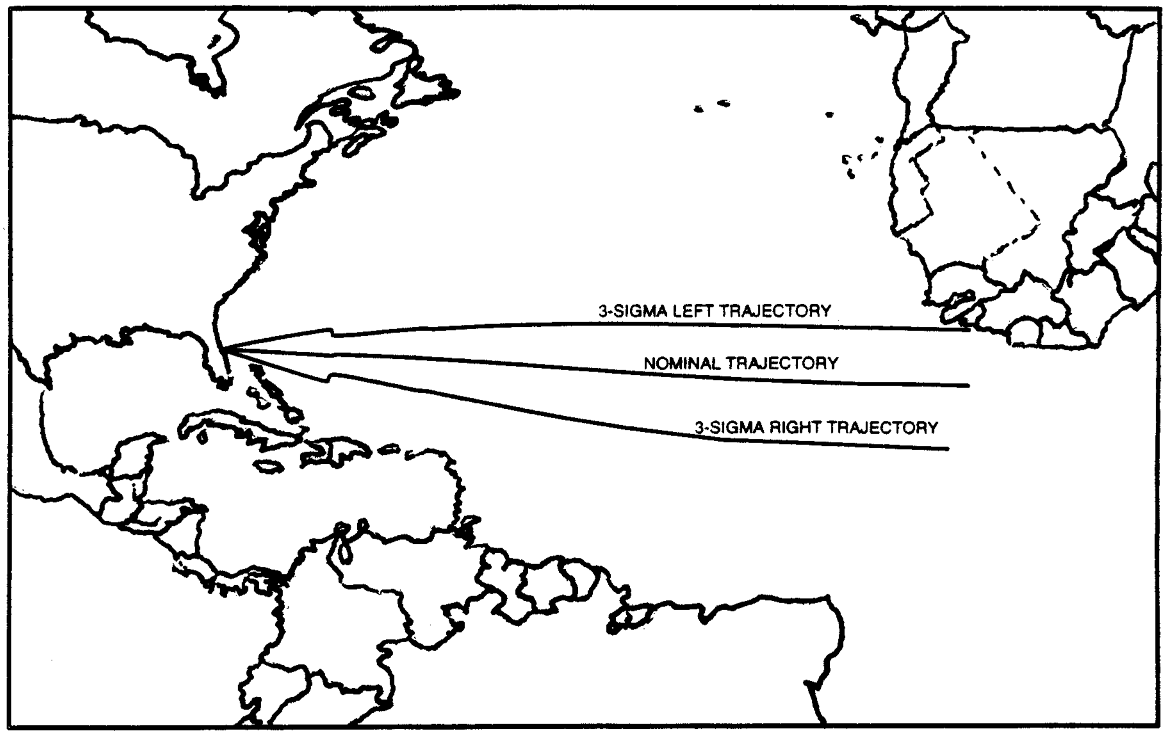

Figure 417.205-1, Illustrative Nominal and Dispersed Trajectories

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(b) *Wind standards.* A trajectory analysis shall incorporate wind data developed in accordance with the wind analysis in § 417.217 and in accordance with the following:

(1) A launch operator shall compute ''with-wind'' launch vehicle trajectories pursuant to § 417.205(f)(6) using annual composite wind profiles. When a launch operator will launch only at a particular time period during the year the launch operator may use the monthly composite wind for that time period.

(2) A launch operator shall compute the annual composite wind profile with a cumulative percentile frequency that represents wind conditions that are at least as severe as the worst wind conditions under which flight would be attempted. These worst wind conditions must account for the launch vehicle's ability to operate normally in the presence of wind and accommodate any flight safety limit constraints.

(c) *Nominal trajectory.* A launch operator shall compute a nominal trajectory that describes a launch vehicle's flight path, position and velocity, assuming all vehicle aerodynamic parameters are as expected, all vehicle internal and external systems perform exactly as planned, and there are no external perturbing influences other than atmospheric drag and gravity.

(d) *Dispersed trajectories.* A launch operator shall compute the following dispersed trajectories and describe a launch vehicle's position and velocity as a function of winds and three-sigma performance in the uprange, downrange, left-crossrange and right-crossrange directions.

(1) *Three-sigma maximum and minimum performance trajectories.* A launch operator shall compute a three-sigma maximum performance trajectory that provides the maximum downrange distance of the instantaneous impact point for any given time after lift-off. A launch operator shall compute a three-sigma minimum performance trajectory that provides the minimum downrange distance of the instantaneous impact point for any given time after lift-off. For any time after lift-off, the flight of a normally performing launch vehicle that is subjected to the assumed wind, shall have three-sigma impact dispersion, assuming a normal bivariate Gaussian distribution, lying between the extremes achieved at that time by the three-sigma maximum performing and three-sigma minimum performing launch vehicles.

(i) In calculating the three-sigma maximum and minimum performance trajectories, a launch operator shall use annual composite head wind and annual composite tail wind profiles that represent the worst wind conditions under which a launch would be attempted as described in accordance with paragraph (b)(2) of this section.

(ii) The three-sigma maximum and minimum performance trajectories must account for all launch vehicle performance error parameters that have a significant effect upon instantaneous impact point range. A launch operator shall identify these parameters and incorporate them into the analysis in accordance with paragraph (f)(1) of this section.

(2) *Three-sigma left and right lateral trajectories.* A launch operator shall compute a three-sigma left lateral trajectory that provides the maximum left crossrange distance of the instantaneous impact point for any given time after lift-off. A launch operator shall compute a three-sigma right lateral trajectory that provides the maximum right crossrange distance of the instantaneous impact point for any given time after lift-off. For any time-after-liftoff, the instantaneous impact point ground trace for three-sigma of all normally performing vehicles, assuming a normal bivariate Gaussian distribution, subjected to the assumed winds, must lie between the three-sigma left lateral instantaneous impact point ground trace and the three-sigma right lateral instantaneous impact point ground trace.

(i) In calculating each left and right lateral trajectory, composite left and composite right lateral-wind profiles shall be used which represent the worst wind conditions for which a launch would be attempted as required by paragraph (b)(2) of this section.

(ii) The three-sigma left and right lateral trajectories must account for the launch vehicle performance error parameters that have a significant effect upon the lateral deviation of the instantaneous impact point. A launch operator shall identify these performance error parameters and incorporate them into the analysis in accordance with paragraph (f)(1) of this section.

(3) *Fuel-exhaustion trajectory.* A launch operator shall compute a fuel exhaustion trajectory that is an extension of either the nominal trajectory taken through fuel exhaustion or the three-sigma maximum trajectory taken through fuel exhaustion, whichever of the two trajectories produces instantaneous impact points with the greatest range for any given time-after-liftoff. The fuel exhaustion trajectory shall be determined in accordance with the following:

(i) Trajectory data through fuel exhaustion is required even if a programmed thrust termination is scheduled in advance of fuel exhaustion.

(ii) For sub-orbital flights, fuel exhaustion trajectory data need only be determined for the last stage. Any previous stage is assumed to have nominal or three-sigma maximum performance as described by paragraph (d)(3) of this section.

(iii) For orbital flights, the fuel exhaustion trajectory data need only be determined for the last suborbital stage. Any previous stage is assumed to have nominal or three-sigma maximum performance as described by paragraph (d)(3) of this section.

(iv) The wind constraints for a fuel exhaustion trajectory shall be the same as those that apply to the nominal or three-sigma trajectory used to compute the fuel exhaustion trajectory.

(e) *Straight-up trajectory.* A launch operator shall compute a straight-up trajectory, beginning at the planned time of ignition, which simulates a malfunction that causes the launch vehicle to fly its entire flight in a vertical or near vertical direction above the launch point. The amount of time that a straight-up trajectory lasts must be no less than the sum of the straight-up time determined in accordance with § 417.215 plus the duration of a potential malfunction turn determined in accordance with § 417.207(b)(2).

(f) *Analysis process and computations.* A launch operator shall use a six-degree-of freedom trajectory model to generate each required three-sigma trajectory in terms of instantaneous impact point distance from the nominal location. In the course of generating each trajectory a launch operator shall use a root-sum-square trajectory analysis method that satisfies the requirements of paragraphs (f)(1) through (6) of this section or may employ an alternate method, such as a Monte Carlo analysis, if the launch operator demonstrates clearly and convincingly through the licensing process that its alternate method provides an equivalent level of safety. When using the root-sum-square method, a launch operator shall:

(1) *Performance error parameters.* Identify individual launch vehicle performance error parameters that contribute to the dispersion of the launch vehicle's instantaneous impact point. A launch operator shall identify all launch vehicle performance error parameters and any standard deviations for each parameter that reflect launch vehicle performance variations and any external forces that can cause offsets from the nominal trajectory during normal flight. Each dispersed trajectory must account for these performance error parameters. The performance error parameters must include thrust; thrust misalignment; specific impulse; weight; variation in firing times of the stages; fuel flow rates; contributions from the guidance, navigation, and control systems; steering misalignment; and winds.

(2) *No-wind trajectory simulation.* Perform a series of no-wind trajectory simulation runs using a six degree-of-freedom model. Each trajectory simulation run must introduce no more than one three-sigma value of a performance error parameter while all other parameters are held at nominal levels.

(3) *Tabulate individual instantaneous impact point deviations.* Tabulate at even one-second intervals, the individual downrange, uprange, left-crossrange, and right-crossrange instantaneous impact point deviations from the nominal instantaneous impact point location caused by each three-sigma value of the performance error parameters.

(4) *Combine individual instantaneous impact point deviations.* For each one-second interval, for each downrange, uprange, left crossrange, and right crossrange direction calculate the square root of the sum of the squares of all the individual instantaneous impact point deviations for each direction. The resulting values for downrange, uprange, left crossrange, and right crossrange represent the three-sigma maximum, minimum, left lateral, and right lateral instantaneous impact point deviations, respectively.

(5) *No-wind matching trajectories.* By further trajectory simulation, generate four thrusting flight no-wind trajectories that match the three-sigma instantaneous impact point deviations calculated in accordance with paragraph (f)(4) of this section.

(6) *With-wind three-sigma trajectories.* Generate each three-sigma trajectory using the worst wind conditions determined in accordance with paragraph (b) of this section and the launch vehicle performance error parameters and magnitudes used to generate the no-wind matching trajectories in accordance with paragraph (f)(5) of this section. The effect of winds on the three-sigma trajectory must be modeled from liftoff through the point in flight where the launch vehicle attains an altitude where the wind no longer affects the launch vehicle.

(g) *Trajectory analysis products.* A launch operator shall submit the products of its trajectory analysis to the FAA in accordance with § 417.203(c). Those products shall include the following:

(1) *Assumptions and procedures.* A description of all assumptions, procedures and models used in deriving the nominal and dispersed trajectories, with particular attention to the six-degrees-of-freedom model.

(2) *Three-sigma launch vehicle performance error parameter(s).* A description of the three-sigma performance error parameters accounted for by a trajectory analysis and each parameter's standard deviations determined in accordance with paragraph (f)(1) of this section.

(3) *Wind profile(s).* A graph and tabular listing of the annual winds required by paragraph (b)(1) of this section and the worst case winds required by paragraph (b)(2) of this section. The graph and tabular wind data must be the same as that used in performing the trajectory analysis and must provide wind magnitude and direction as a function of altitude for the air space regions from the Earth's surface to 100,000 feet in altitude for the area intersected by the launch vehicle trajectory. Altitude intervals must not exceed 1000 feet. Statistical wind geographic reference points shall not exceed spatial intervals greater than 2.5 degrees latitude or 2.5 degrees longitude. The graphical and tabular data shall conform to the presentation requirements of § 417.217(d)(1)(i) and § 417.217(d)(1)(ii), respectively.

(4) *Launch azimuth.* The azimuthal direction of the trajectory's ''X-axis'' at liftoff measured clockwise in degrees from true north.

(5) *Launch point.* Identification and location of the proposed launch point, including its name, geodetic latitude (+N), longitude (+E), and geodetic height.

(6) *Reference ellipsoid.* The name of the reference ellipsoid that the launch operator uses in performing trajectory analysis to approximate the average curvature of the Earth and the length of semi-major axis, length of semi-minor axis, flattening parameter, eccentricity, gravitational parameter, and angular velocity of the Earth at the equator. If the reference ellipsoid is not a WGS–84 ellipsoidal Earth model, the applicant shall submit the equations needed to convert the submitted ellipsoid information to the WGS–84 ellipsoid.

(7) *Temporal trajectory items.* A launch operator shall provide the following temporal trajectory data for time intervals not in excess of one second and for the discrete time points that correspond to each jettison, ignition, burnout, and thrust termination of each stage. For a sub-orbital launch vehicle, these data must account for the weight of any and all payloads to be flown and the planned nominal quadrant elevation angles of the vehicle's launcher. These data must be provided on paper in text format or electronically via disk files. The text format must have a column for each data item and a row for each time point. Disk files must be in ASCII text, space delimited format, with a column for each data item and a row for each time point. An electronic ''readme'' file shall be provided that clearly identifies the data, and their units of measure, in the individual disk files.

(i) *Trajectory time-after-liftoff.* Time-after-liftoff is measured from first motion of the first thrusting stage of the launch vehicle. The first motion time is identified as T–0 and shall be tabulated as the ''0.0'' time point on the trajectory.

(ii) *Launch Vehicle Direction Cosines.* The direction cosines of the roll axis, pitch axis, and yaw axis. The roll axis is a line identical to the launch vehicle's longitudinal axis with its origin at the nominal center of gravity positive towards the vehicle nose. The roll plane is normal to the roll axis at the vehicle's nominal center of gravity. The yaw axis and the pitch axis are any two orthogonal axes lying in the roll plane, and are chosen at the launch operator's discretion. Roll, pitch and yaw axes must be right-handed systems so that, when looking along the roll axis toward the nose, a clockwise rotation around the roll axis will send the pitch axis toward the yaw axis. The right-handed system must be oriented such that the yaw axis is positive in the downrange direction while in the vertical position (roll axis upward from surface) or positive at an angle of 180 degrees to the downrange direction. The axis may be related to the vehicle's normal orientation with respect to the vehicle's trajectory but, once defined, remain fixed with respect to the vehicle's body. The launch operator shall indicate the positive direction of the yaw axis chosen. The reference system for the direction cosines shall be the EFG system described in paragraph (g)(7)(iv) of this section.

(iii) *X, Y, Z, XD, YD, ZD trajectory coordinates.* The launch vehicle position coordinates (X, Y, Z) and velocity magnitudes (XD, YD, ZD) must be referenced to an orthogonal, Earth-fixed, right-handed coordinate system. The XY-plane must be tangent to the ellipsoidal Earth at the origin, which is the launch point, the positive X-axis must coincide with the launch azimuth, the positive Z-axis must be directed away from the ellipsoidal Earth, and the Y-axis must be positive to the left looking downrange.

(iv) *E, F, G, ED, FD, GD trajectory coordinates.* The launch vehicle position coordinates (E, F, G) and velocity magnitudes (ED, FD, GD) must be referenced to an orthogonal, Earth fixed, Earth centered, right-handed coordinate system. The origin of the EFG system must be at the center of the reference ellipsoid. The E and F axes lie in the plane of the equator and the G-axis coincides with the rotational axis of the Earth. The E-axis is positive through 0° East longitude (Greenwich Meridian), the F-axis is positive through 90° East longitude, and the G-axis is positive through the North Pole. This system is non-inertial and rotates with the Earth.

(v) *Resultant Earth-fixed velocity.* The square root of the sum of the squares of the XD, YD, and ZD components of the trajectory state vector.

(vi) *Path angle of velocity vector.* The angle between the local horizontal plane and the velocity vector measured positive upward from the local horizontal. The local horizontal is a plane tangent to the ellipsoidal Earth at the sub-vehicle point.

(vii) *Sub-vehicle point.* Sub-vehicle point coordinates include present position geodetic latitude (+N) and present position longitude (+E). These coordinates are found at each trajectory time on the surface of the ellipsoidal Earth model and are located at the intersection of the line normal to the ellipsoid and passing through the launch vehicle center of gravity.

(viii) *Altitude.* The distance from the sub-vehicle point to the launch vehicle's center of gravity.

(ix) *Present position arc-range.* The distance measured along the surface of the reference ellipsoid, from the launch point to the sub-vehicle point.

(x) *Total weight.* The sum of the inert and propellant weights for each time point on the trajectory.

(xi) *Total thrust.* This thrust is a scalar quantity.

(xii) *Instantaneous impact point data.* These data include instantaneous impact point geodetic latitude (+N), instantaneous impact point longitude (+E), instantaneous impact point arc-range, and time to instantaneous impact. The instantaneous impact point arc-range is the distance, measured along the surface of the reference ellipsoid, from the launch point to the instantaneous impact point. The time to instantaneous impact is the vacuum flight time remaining to impact, assuming all thrust is terminated at the associated time-after-liftoff.

(xiii) *Dynamic pressure as a function of time-of-flight.* Tabular data as part of the temporal trajectory items and a two-dimensional graph, with time-of-flight on the X-axis and dynamic pressure on the Y-axis.

(xiv) *Coriolis displacement.* The geodetic distance from the instantaneous impact point to the displacement point caused by Coriolis accelerations if this effect is not included in the trajectory computations.

(8) *Conditions for guided expendable launch vehicles.* For guided expendable launch vehicles, all trajectories must be provided from launch up to a point in flight where effective thrust of the final stage has terminated, or to thrust termination of the stage or burn that places the vehicle in orbit.

(9) *Conditions for unguided expendable launch vehicles.* For unguided expendable launch vehicles, trajectories shall be provided from launch until burnout of the final stage for each nominal quadrant elevation angle and payload weight. Time steps of the trajectory must be at even intervals, not to exceed one second increments during thrusting flight, and for discrete times corresponding to each jettison, ignition, burnout, and thrust termination of each stage. If any stage burn time is less than four seconds, time intervals must be reduced to 0.2 seconds or less.

§ 417.207 Malfunction turn analysis.

(a) *General.* A launch operator shall perform a malfunction turn analysis to determine a launch vehicle's greatest turning capability as a function of trajectory time. A launch operator shall use the products of its malfunction turn analysis as input to its flight safety limits analysis and other analysis where it is necessary to determine how far a launch vehicle's impact point can deviate from the nominal impact point when a malfunction occurs. A launch operator shall determine the set of launch vehicle velocity vector angular deviations, measured from the nominal launch vehicle velocity vector, that cause deviation from the nominal instantaneous impact point. The velocity vector angular deviations shall be determined as a function of time, beginning at the malfunction start time. A launch operator shall also determine the corresponding change in launch vehicle velocity magnitude from the nominal velocity magnitude, as a function of time, beginning at the malfunction start time.

(b) *Malfunction turn analysis constraints.* A launch operator shall apply the following constraints to a malfunction turn analysis:

(1) A launch operator shall determine a flight safety system time delay in accordance with § 417.223 and use the results to determine the required malfunction turn duration in accordance with paragraph (b)(2) of this section.

(2) A malfunction turn shall start at a given malfunction start time and have a duration of no less than 12 seconds or the product of 1.2 times the flight safety system time delay, whichever is greater. These duration limits apply regardless of whether or not the vehicle would break up or tumble before the prescribed duration of the turn.

(3) A malfunction turn analysis must cover the thrusting periods of flight along a nominal trajectory. Malfunction turn data are required for all trajectory times from ignition to thrust termination of the final thrusting stage or until the launch vehicle achieves orbital velocity (orbital insertion), whichever occurs first.

(4) A malfunction turn must be a 90-degree turn or a turn in both the pitch and yaw planes that would produce the largest deviation from the nominal instantaneous impact point of which the launch vehicle is capable at any time during the malfunction turn. A 90-degree turn is a turn produced at the malfunction start time by instantaneously re-directing and maintaining the vehicle's thrust at 90 degrees to the velocity vector, without regard for how this situation can be brought about. A launch operator shall determine the type of turn to use as a malfunction turn in accordance with paragraph (d) of this section. If a launch operator elects not to use a 90-degree turn, the following types of turns apply when determining the malfunction turn in accordance with paragraph (d) of this section:

(i) *Pitch turn.* A pitch turn is the angle turned by the launch vehicle's total velocity vector in the pitch-plane. The velocity vector's pitch-plane is the two dimensional surface that includes the launch vehicle's yaw-axis and the launch vehicle's roll-axis. Figure 417.207–1 shows relative spatial relationships between the pitch plane, acceleration vector ($\overline{A}_o$), initial velocity vector ($\overline{V}_o$), malfunction turn velocity vector ($\overline{V}_{turn}$), angle of attack (α), and malfunction turn angle (θ). The depiction of the acceleration vector, as shown in Figure 417.207–1, was simplified by aligning it with the roll axis.

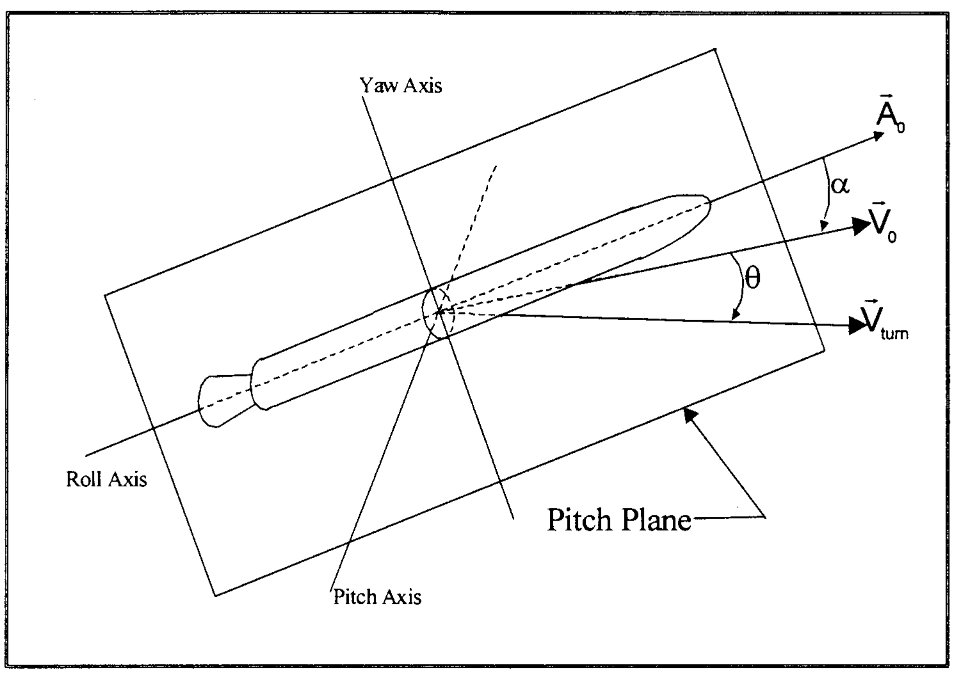


Figure 417.207-1, Pitch Plane Depiction

(ii) *Yaw turn.* A yaw turn is the angle turned by the launch vehicle's total velocity vector in the lateral plane. The velocity vector's lateral plane is the two dimensional surface that includes the launch vehicle's pitch axis and the launch vehicle's total velocity vector. Figure 417.207–2 shows relative spatial relationships between the lateral turn plane, acceleration vector ($\overline{A}_o$), initial velocity vector ($\overline{V}_o$), malfunction turn velocity vector ($\overline{V}_{turn}$), angle of attack (α), and malfunction turn angle (θ). The depiction of the acceleration vector, as shown in Figure 417.207–2, was simplified by aligning it with the roll axis. The launch operator shall measure the angle of attack between the roll axis and the velocity vector.

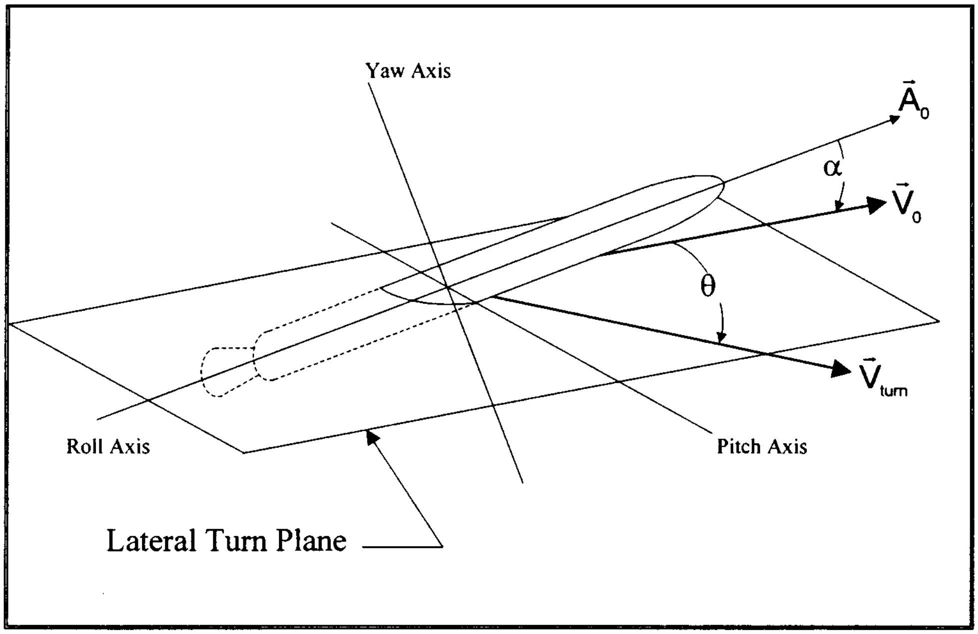


Figure 417.207-2, Lateral Turn Plane Depiction

(iii) *Trim turn.* A trim turn is a turn where a launch vehicle's thrust moment balances the aerodynamic moment while a constant rotation rate is imparted to the launch vehicle's longitudinal axis. A maximum-rate trim turn is made at or near the greatest angle of attack that can be maintained while the aerodynamic moment is balanced by the thrust moment, whether the vehicle is stable or unstable.

(iv) *Tumble turn.* A tumble turn is a turn that results if the launch vehicle's airframe rotates in an uncontrolled fashion, at an angular rate that is brought about by a thrust vector offset angle, which is held constant throughout the turn. A series of tumble turns, each turn with a different thrust vector offset angle, shall be plotted on the same graph for a given malfunction start time.

(v) *Turn envelope.* A turn envelop is a curve on a tumble turn graph that has tangent points to each individual tumble turn curve computed for a given malfunction start time. This curve envelops the actual tumble turn curves giving a prediction of tumble turn angle for data areas between the calculated turn curves. This envelope is required because an infinite number of thrust vector deviation angles is possible and it is impractical to produce a curve for each deviation angle. Figure 417.207–3 depicts a series of tumble turn curves and the tumble turn envelope curve.

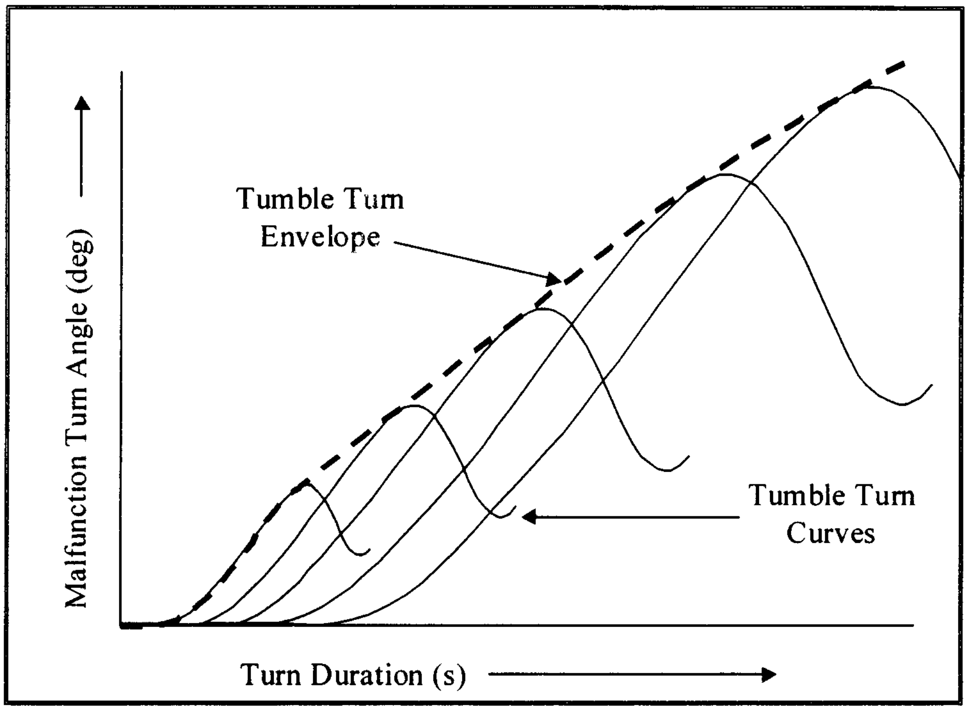


Figure 417.207-3, Illustrative Tumble Turn Envelope

(5) A launch operator's first malfunction turn start time must not be greater than the nominal trajectory time corresponding to the earliest destruct time determined in accordance with § 417.221 minus the flight safety system delay time determined in accordance with § 417.223. Subsequent malfunction turns shall be initiated at regular nominal trajectory time intervals not to exceed the flight safety system delay time.

(6) A malfunction turn analysis must provide malfunction turn computation intervals of one second over the duration of each malfunction turn.

(7) For the purposes of performing the various malfunction turn computations, a launch operator shall assume that the launch vehicle performance is nominal up to the point of the malfunction that produces the turn.

(8) A launch operator shall not include the effects of gravity in a malfunction turn analysis, unless a launch operator ensures that there is no duplication of gravity effects by any other dependent analysis that uses the products of the malfunction turn analysis as input. Other analyses that may account for gravity effects include, but need not be limited to, the flight safety limits analysis (§ 417.213), data lose flight time analysis (§ 417.221), toxic release hazard analysis (§ 417.229), distant focus overpressure blast effects risk analysis (§ 417.231), hazard areas analysis (§ 417.225), and debris risk analysis (§ 417.227).

(9) A launch operator shall evaluate both pitch and yaw turns for malfunction start times that correspond to each sub-vehicle point. A launch operator shall use the velocity vector turn angle rate that causes the largest dispersion, from either the pitch or yaw turn computations, in the development of flight safety limits. If the pitch turn angle and yaw turn angle are the same except for the effects of gravity, the yaw turn angles may be determined from pitch calculations that, in effect, have had the gravity component subtracted out at each step in the computations.

(10) A launch operator's malfunction turn analysis shall ensure the tumble turn envelope curve maintains a positive slope throughout the malfunction turn duration as illustrated in figure 417.207–3. A launch operator may encounter a known difficulty with calculating tumble turns for an aerodynamically unstable launch vehicle. In the high aerodynamic region it often turns out that no matter how small the initial deflection of the rocket engine, the airframe tumbles through 180 degrees, or one-half cycle, in less time than the required turn duration period. In such a case, the launch operator shall use a 90-degree turn as the malfunction turn.

(c) *Failure modes.* A malfunction turn analysis must evaluate the significant failure modes that result in a thrust vector offset from the nominal state. If the malfunction turn at a given malfunction start time can occur as a function of more than one failure mode, the launch operator must evaluate the malfunction turn for the mode causing the most rapid and largest launch vehicle instantaneous impact point deviation. Failure modes will vary as a function of flight time. The same set of failure modes shall be used for each malfunction start time where applicable to that point of a vehicle's flight.

(d) *Determining type of malfunction turn to use.* A launch operator shall establish the maximum turning capability of a launch vehicle's velocity vector based on an evaluation of trim turns and tumble turns, in both the pitch and yaw planes, or a 90-degree turn. The different types of turns are defined in paragraph (b)(4) of this section. When computing malfunction turn angles on the basis of a 90-degree turn, a launch operator shall ensure that its flight safety plan, including the flight corridor, flight safety limits, and mission rules reflect the conservative safety buffers that result from using this approach. When not using a 90-degree turn, a launch operator shall establish the launch vehicle maximum turning capability in accordance with the following malfunction turn capabilities:

(1) *Launch vehicle stable at all angles of attack.* If a launch vehicle is so stable

that the maximum thrust moment cannot produce tumbling, but produces a maximum-rate trim turn at some angle of attack less than 90 degrees, the launch operator shall determine a series of trim turns, including the maximum-rate trim turn, by varying the initial thrust vector offset at the beginning of the turn. If the maximum thrust moment results in a maximum-rate trim turn at some angle of attack greater than 90 degrees, a launch operator shall determine a series of trim turns for angles of attack up to and including 90 degrees.

(2) *Launch vehicle aerodynamically unstable at all angles of attack.* During the part of launch vehicle flight where the maximum trim angle of attack is small, tumble turns may result in the greatest malfunction turn angles. If the maximum trim angle of attack is large, trim turns may lead to higher malfunction turn angles than tumble turns. If the launch operator clearly and convincingly demonstrates that flying a trim turn even for a period of only a few seconds is impossible, the malfunction turn analysis need only determine tumble turns. Otherwise, the launch operator's malfunction turn analysis must determine a series of trim turns, including the maximum-rate trim turn, and the family of tumble turns.

(3) *Launch vehicle unstable at low angles of attack but stable at some higher angles of attack.* If large engine deflections result in tumbling, and small engine deflections do not, a series of trim and tumble turns shall be generated as required by paragraph (d)(2) of this section for launch vehicles aerodynamically unstable at all angles of attack. If both large and small constant engine deflections result in tumbling, regardless of how small the deflection might be, the malfunction turn capabilities achieved at the stability angle of attack, assuming no upsetting thrust moment, shall be used in addition to the turns achieved by a tumbling vehicle. This situation arises because the stability at high angles of attack is insufficient to arrest the angular velocity, which is built up during the initial part of a tumble turn where the launch vehicle is unstable. Although the launch vehicle cannot arrive at this stability angle of attack as a result of the constant engine deflection, there is some deflection behavior, such as a deflection rate, that will produce this result. If a launch operator determines that arriving at such a deflection program is too difficult or too time consuming, the launch operator may assume that the launch vehicle instantaneously rotates to the trim angle of attack and stabilizes at this point. In such a case, tumble turn angles may be used during that part of launch vehicle flight for which the tumble turn envelope curve maintains a positive slope throughout the duration of the computation.

(e) *Malfunction turn analysis products.* The products of a launch operator's malfunction turn analysis to be submitted to the FAA in accordance with § 417.203(c) must include the following:

(1) A description of the assumptions, techniques, and equations used in deriving the malfunction turns.

(2) A set of sample calculations for at least one flight hazard area malfunction start time and one downrange malfunction start time. The sample computation for the downrange malfunction start time shall be at least 50 seconds greater than the flight hazard area malfunction start time or at the time of nominal thrust termination of the final stage minus the malfunction turn duration.

(3) A description of how any yaw turn angles were developed from pitch turn computations as described in paragraph (b)(9) of this section.

(4) A launch operator shall submit malfunction turn data in tabular and graphic formats. Scale factors of graphs must be selected so the plotting and reading accuracy do not degrade the accuracy of the data. For each malfunction turn start time, the time scales on malfunction velocity vector turn angle and malfunction velocity magnitude plot pairs shall be the same. Tabular listings of the data used to generate the graphs are required in digital ASCII file format. A launch operator shall submit the data items required in this paragraph for each malfunction start time. These data must be provided at intervals of one second or less over the malfunction turn duration

(i) *Velocity turn angle graphs.* For each malfunction turn angle graph, the ordinate axis must represent the total angle turned by the velocity vector, and the abscissa axis must represent the time duration of the turn. The abscissa must be divided into one-second increments. A launch operator shall submit a graph for each malfunction start time. The series of tumble turns shall include the envelope of all tumble turn curves. The tumble turn envelope shall represent the tumble turn capability for all possible constant thrust vector offset angles (or other parameter). For this case, plots of each tumble turn curve selected to define the envelope are required on the same graph with the envelope. For trim turns, a series of trim turn curves for representative values of thrust vector offset (or other parameter) is required. The series of trim turn curves shall include the maximum-rate trim turn. Figure 417.207–4 depicts an example family of tumble turn curves and the tumble turn velocity vector envelope.

(ii) *Velocity magnitude graphs.* For each malfunction velocity magnitude graph, the ordinate axis must represent the magnitude of the velocity vector and the abscissa axis must represent the time duration of the turn. The abscissa must be divided into one-second increments. A launch operator shall submit a graph for each malfunction start time. The total velocity magnitude shall be plotted as a function of time after the malfunction start time for each thrust vector offset (or other parameter) used to define the corresponding velocity turn-angle curve. A corresponding velocity magnitude curve is required for each velocity tumble-turn angle curve and each velocity trim-turn angle curve. For each individual tumble turn curve selected to define the tumble turn envelope, its point of tangency to the envelope shall be indicated on the corresponding velocity magnitude graph. The point of tangency is the point where the tumble turn envelope is tangent to an individual tumble turn curve produced with a discrete thrust vector offset angle (or other parameter). Transposing the points of tangency to the velocity magnitude curves is accomplished by plotting a point on the velocity magnitude curve at the same time point where tangency occurs on the corresponding velocity tumble-turn angle curve. Figure 417.207–5 depicts an example tumble turn velocity magnitude curve.

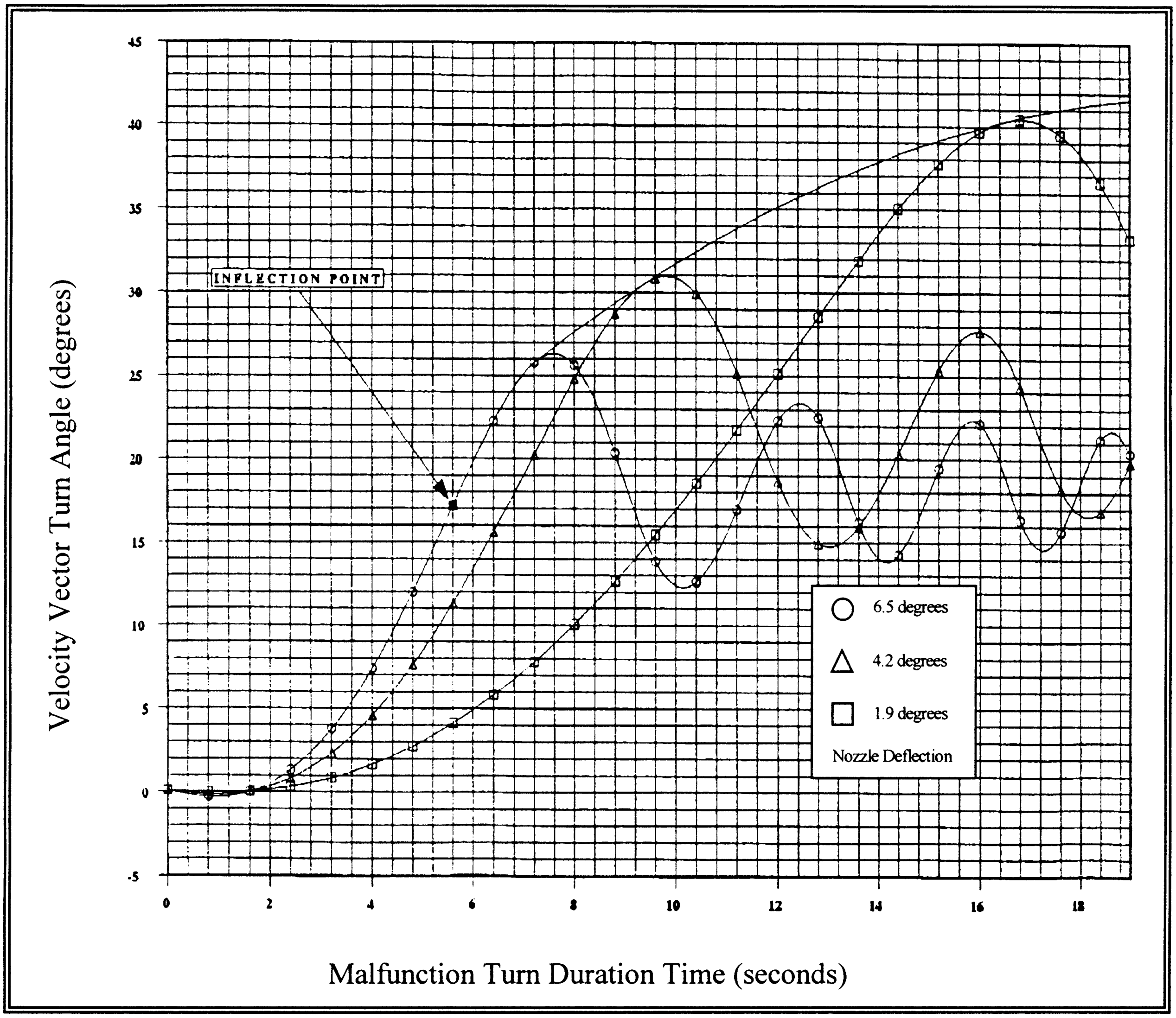


Figure 417.207-4, Example Tumble Turn Velocity Vector Turn Angle Graph.

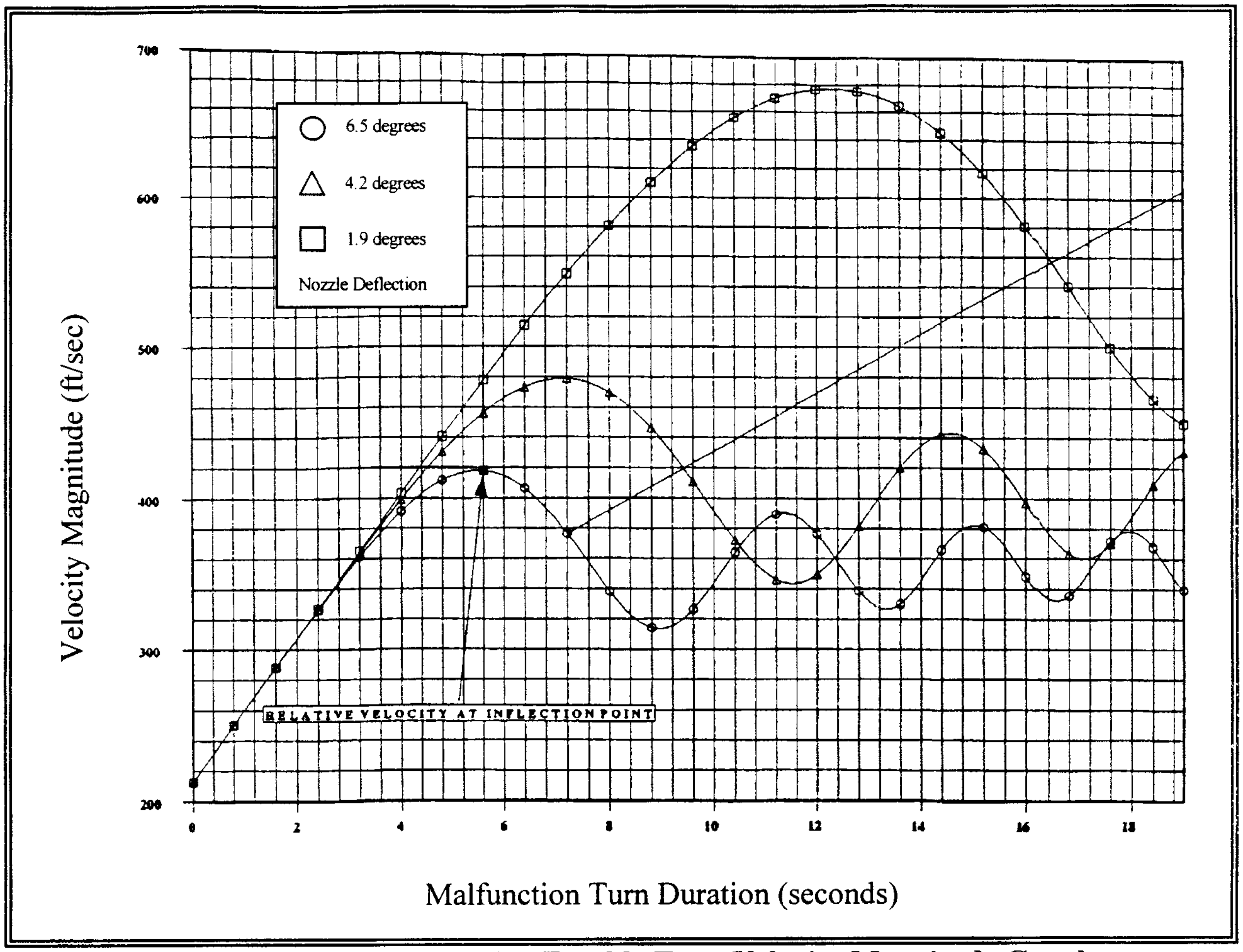


Figure 417.207-5, Illustrative Tumble Turn Velocity Magnitude Graph.

(iii) *Vehicle orientation.* If thrust-augmenting rocket motors are used on a launch vehicle, the launch operator shall submit tabular or graphical data for the vehicle attitude in the form of roll, pitch, and yaw angular orientation of the vehicle longitudinal axis as a function of time into the turn for each turn initiation time. Angular orientation of a launch vehicle's longitudinal axis is illustrated in figures 417.207–6 and 417.207–7.

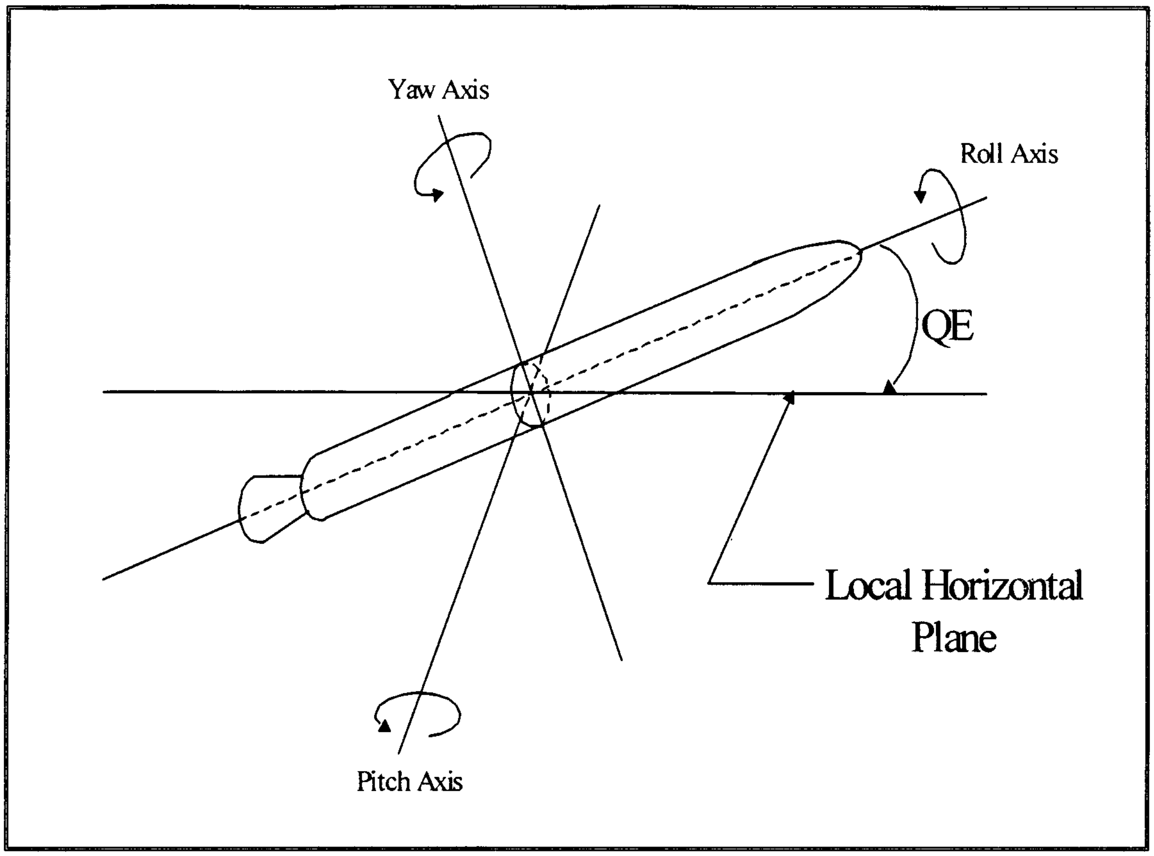


Figure 417.207-6, Illustrative Longitudinal Axis Quadrant Elevation (QE)

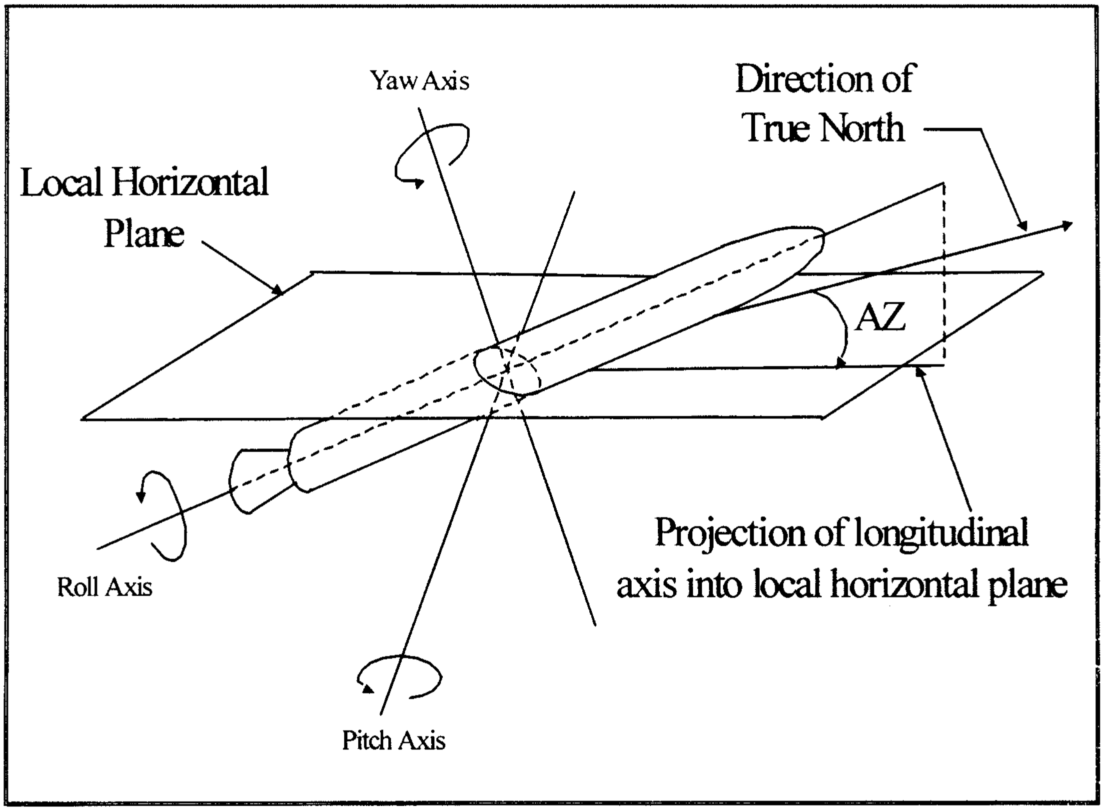


Figure 417.207-7, Illustrative Longitudinal Axis Azimuth (AZ)

(iv) *Onset conditions.* A launch operator shall provide launch vehicle state information for each malfunction start time. This state data shall include the launch vehicle thrust, weight, velocity magnitude and pad-centered topocentric X, Y, Z, XD, YD, ZD state vector.

(v) *Breakup information.* A launch operator shall specify if its launch vehicle will remain intact throughout each malfunction turn. If the launch vehicle will breakup during a turn, then the time for launch vehicle breakup must be indicated on the velocity magnitude graphs. The time into the turn at which vehicle breakup would occur must be either a specific value or a probability distribution for time to breakup.

(vi) *Inflection point.* A launch operator shall indicate the inflection point on each tumble turn envelope curve and maximum rate trim turn curve for each malfunction start time as illustrated in figure 417.207–4. The inflection point marks the point in time during the turn where the slope of the curve stops increasing and begins to decrease or, in other words, the point where the concavity of the curve changes from concave up to concave down. The inflection point on a malfunction turn curve indicates the time in the malfunction turn that the launch vehicle body achieves a 90-degree rotation from the nominal position. On a tumble turn curve the inflection point represents the start of the launch vehicle tumble.

(vii) *Gravity effects.* A launch operator's malfunction turn analysis products must identify whether the malfunction turn analysis accounts for the effects of gravity. If the malfunction turn analysis accounts for the effects of gravity, the products must include a demonstration of how the analysis satisfies paragraph (b)(8) of this section.

§ 417.209 Debris analysis.

(a) *General.* A launch operator shall perform a debris analysis that identifies inert, explosive and other hazardous launch vehicle debris resulting from a launch vehicle malfunction and from any planned jettison of launch vehicle components for orbital and sub-orbital launch.

(b) *Debris analysis constraints.* A debris analysis must produce the debris models described in paragraphs (c) and (d) of this section, in the form of lists of debris that results from breakup of a launch vehicle and any planned jettison of debris or components. Each list must describe each debris fragment produced, including its physical characteristics, whether it is inert or explosive, and the effects of impact, such as explosive overpressure, skip, splatter, or bounce radius. Each debris list must be produced in accordance with the following:

(1) A debris analysis must account for launch vehicle breakup caused by the activation of any flight termination system in accordance with the following:

(i) A debris analysis must account for the effects of debris produced when an intact malfunctioning vehicle is destroyed by flight termination system activation.

(ii) A debris analysis must account for spontaneous breakup of the launch vehicle assisted by the action of any inadvertent separation destruct system included as part of a flight termination system.

(iii) A debris analysis must account for the effects of debris produced when a flight termination system is activated after inadvertent breakup of the launch vehicle.

(2) A debris analysis must account for debris due to any malfunction where the launch vehicle's structural integrity limits may be exceeded.

(3) A debris analysis must account for the immediate post-breakup or jettison

environment of the launch vehicle debris, any change in debris characteristics over time from launch vehicle break-up or jettison to debris impact, and the effects of the debris upon impact.

(4) A debris analysis must account for the impact overpressure, fragmentation, and secondary debris effects of any confined or unconfined solid propellant chunks and fueled components containing either liquid or solid propellants that could survive to impact, as a function of vehicle malfunction time.

(5) A debris analysis must account for the effects of impact of the intact vehicle as a function of failure time. The intact impact debris analysis must identify the trinitrotoluene (TNT) yield of impact explosions, and the numbers of fragments projected from all such explosions, including non-launch vehicle ejecta and the blast overpressure radius. The TNT yield of impact explosion may be estimated from several models. The input to these models must include the propellant weight at impact, the impact speed, the orientation of the propellant, and the impacted surface material. Figure 417.209–1 shows the generic relationship between impact speed and TNT yield. A launch operator shall identify the impact yield relationship for its launch vehicle propellant for use in the debris analysis.

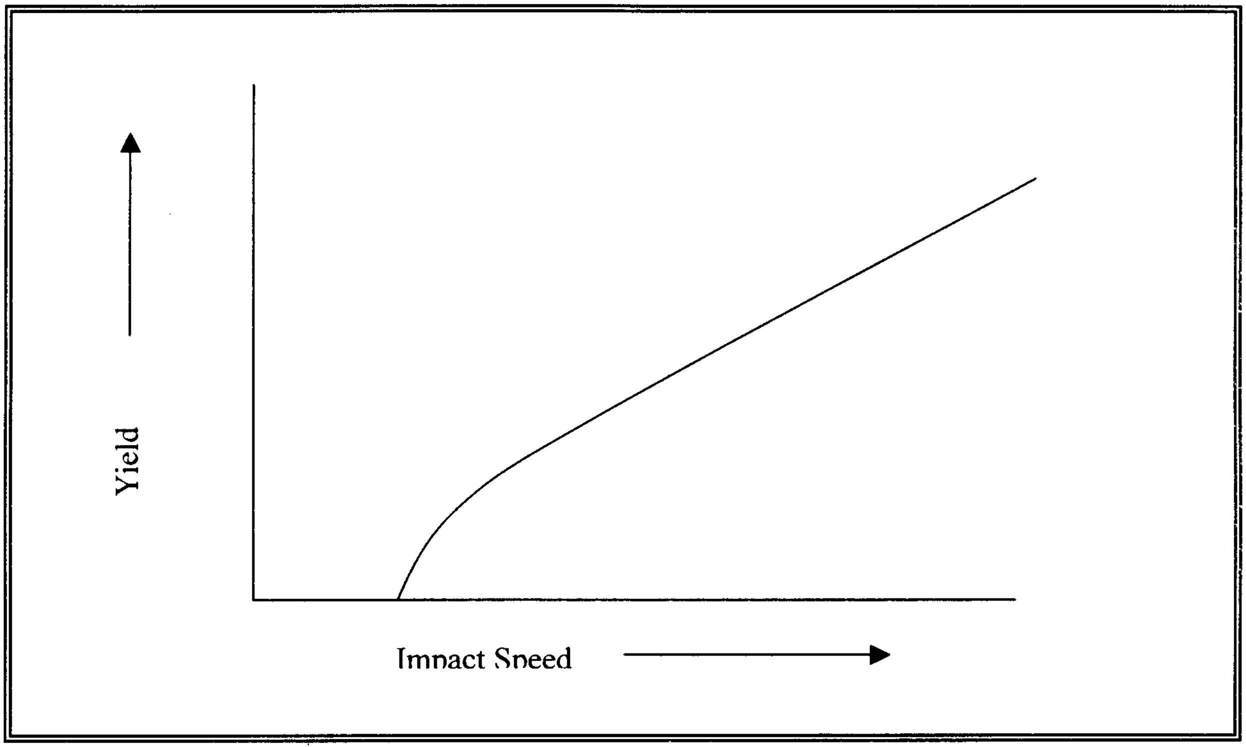


Figure 417.209-1, Generic Relationship between Yield and Impact Speed of Propellant

(c) *Debris model.* A debris analysis must produce a model of the debris resulting from unplanned breakup of a launch vehicle for use as input to other analyses, such as establishing flight safety limits and hazard areas and performing debris risk, toxic, and blast analyses. A launch operator's debris model must satisfy the following:

(1) *Debris fragments.* A debris model must contain debris fragment data for the launch vehicle flight period from the planned ignition time until the launch vehicle achieves orbital velocity for an orbital launch. For a sub-orbital launch, the debris model must contain debris fragment data for the launch vehicle flight period from the planned ignition time up to thrust termination of the last thrusting stage.

(2) *Inert fragments.* A debris model must identify all inert fragments that are not volatile and that could not burn or explode. A debris model must identify inert fragments for each breakup time during flight corresponding to a critical event when the fragment catalog is significantly changed by the event. Critical events include staging, payload fairing jettison, or other normal hardware jettison activities.

(3) *Explosive and non-explosive propellant fragments.* A debris model must identify all propellant fragments that are explosive or non-explosive upon impact. The debris model must describe each propellant fragment as a function of time, from the time of breakup through ballistic free-fall to impact. The data shall describe the fragment characteristics, including its weight, at the time of breakup and at the time of impact. The fall time characteristics shall be described as a function of time, such as burn rate under ambient atmospheric conditions. The time frequency of the data must represent the rate at which the fragment characteristics change so as not to reduce the accuracy of the data. The debris model shall identify the following types of propellant fragments:

(i) *Un-contained non-explosive solid propellant fragment.* Solid propellant that is exposed directly to the atmosphere and that could burn but not explode upon impact.

(ii) *Contained non-explosive propellant fragment.* Solid or liquid propellant that is enclosed in a container, such as a motor case or pressure vessel, and that could burn but not explode upon impact.

(iii) *Contained explosive propellant fragment.* Solid or liquid propellant that is enclosed in a container, such as a motor case or pressure vessel, and that will explode upon impact.

(iv) *Un-contained explosive solid propellant fragment.* Solid propellant that is exposed directly to the atmosphere and that will explode upon impact.

(4) *Other non-inert debris fragments.* In addition to the explosive and flammable fragments required by paragraph (c)(3) of this section, a debris model must identify any other non-inert debris fragments, such as toxic or radioactive fragments, that present any other hazards to the public.

(5) *Fragment ballistic coefficient.* A debris model must include the axial, transverse, and tumble orientation ballistic coefficient for each fragment's projected area as described in paragraph (c)(8) of this section.

(6) *Fragment weight.* At each modeled breakup time, the individual fragment weights must approximately add up to the total weight of inert material in the vehicle combined with the weight of contained liquid propellants and solid propellants that are not consumed in the initial breakup or conflagration.

(7) *Fragment imparted velocity.* A debris model must include the maximum velocity imparted to each fragment due to potential explosion or pressure rupture. Unless otherwise defined by the launch operator, the velocity shall be modeled with a Maxwellian distribution with the specified maximum value equal to the 97th percentile. If the velocity distribution is different than the Maxwellian, a launch operator shall define the distribution, including whether the specified maximum value is interpreted as a fixed value with no uncertainty.

(8) *Fragment projected area.* A debris model must include the planform area of the fragment normal to the drag force at the stability angle of attack. If the fragment will not stabilize, the projected area is the tumble area normal to the drag force.

(9) *Fragment effective casualty area.* A debris model must identify the effective casualty area of each debris fragment. For inert fragments and non-explosive propellant fragments the casualty area must account for the size of the fragment, the path angle of the fragment trajectory at impact, the effects of slide, bounce and splatter produced from hard and soft surfaces, and whether a non-explosive propellant fragment is contained or un-contained. For explosive propellant fragments the effective casualty area must account for blast overpressure, non-explosive remains, ejecta originating from the impact location, and whether the propellant fragment is contained or un-contained. For other non-inert fragments, such as toxic or radioactive fragments, the effective casualty area must account for the diffusion, dispersion, deposition, radiation or other hazard exposure characteristics of the non-inert debris and must be a circle that is defined by a hazard radius for the non-inert fragment.

(10) *Debris fragment count.* A debris model must include the total number of each type of fragment listed in paragraphs (c)(2), (c)(3), and (c)(4) of this section resulting from a malfunction.

(11) *Fragment classes.* A launch operator shall categorize malfunction debris fragments into classes where the hazards associated with the mean fragment in each class conservatively represent the hazards for every fragment in the class. A launch operator shall define fragment classes as one or more fragments whose characteristics are similar enough to allow all the fragments in the class to be described and treated by a single average set of characteristics. Fragments shall be categorized into classes in accordance with the following:

(i) A launch operator shall use fragment type as the primary parameter for categorizing fragments. All fragments within a class must be of the same type as defined in paragraphs (c)(2), (c)(3), and (c)(4) of this section.

(ii) A launch operator shall use the debris subsonic ballistic coefficient (β_{sub}) as the secondary parameter for categorizing fragments. A launch operator shall keep the difference of the smallest $\log_{10}10(\beta_{sub})$ value from the largest $\log_{10}10(\beta_{sub})$ value in a class less than 0.5.

(iii) A launch operator shall use the breakup-imparted velocity (ΔV) as the tertiary parameter for categorizing fragments. Fragments shall be categorized as a function of the range of ΔV for the fragments within a class and the class's median subsonic ballistic coefficient. For each class, a launch operator shall keep the ratio of the maximum breakup-imparted velocity (ΔV_{max}) to minimum breakup-imparted velocity (ΔV_{min}) within the following bound:

$$\frac{\Delta V_{max}}{\Delta V_{min}} < \frac{5}{1+\log_{10}\left(\beta'_{sub}\right)}$$

Where: β'_{sub} is the median subsonic ballistic coefficient for the fragments in a class.

(d) *Jettisoned body model.* A launch operator's debris analysis must produce a jettisoned body model of the launch vehicle debris resulting from scheduled launch vehicle events for use as input to other analyses, such as the flight safety limits, hazard areas, and debris risk analyses. Jettisoned bodies include, but need not be limited to, stages, payload fairings, thrust reversal ports, solid rocket motors, attach fittings and associated hardware components. A jettisoned body model must include, but need not be limited to the following:

(1) *Jettisoned body fragment count.* The number of each type of jettisoned body resulting from a specific scheduled jettison.

(2) *Re-entry breakup.* If the jettisoned body breaks up during reentry, the launch operator's debris model must include an estimate of the number of debris fragments, their approximate weights, projected areas, and ballistic coefficients.

(3) *Jettison flight time.* The time from liftoff during normal flight that each jettison is planned to occur.

(4) *Weights.* Total weight of each jettisoned body at the time it is jettisoned.

(5) *Projected area.* The stability angle of attack planform area of the jettisoned body normal to the drag force. If the jettisoned body will not stabilize, the projected area is the tumble area normal to the drag force.

(6) *Ballistic coefficient.* The axial, transverse, and tumble orientation ballistic coefficient for each fragment's projected area as identified in accordance with paragraph (d)(5) of this section.

(e) *Debris analysis products.* A launch operator shall submit the products of its debris analysis to the FAA in accordance with § 417.203(c). Those products shall include the following:

(1) *Multiple fragment lists.* Lists of fragments that identify the variation of the fragment characteristics with breakup time.

(2) *Fragment descriptions.* A description of the fragments contained in the launch operator's debris model required by paragraph (c) of this section. The description must identify the fragment as a launch vehicle part or component, describe its shape and dimensions and include any drawings.

(3) *Minimum distance fragment.* As a function of breakup time, identification of the fragment that, in the absence of winds, will travel the least distance in comparison to all other fragments.

(4) *Intact impact TNT yield.* For an intact impact of a launch vehicle, for each failure time, a launch operator shall identify the TNT yield of each impact explosion, blast overpressure radius, and the number of fragments projected from all such explosions including non-launch vehicle ejecta.

(5) *Maximum distance fragment.* As a function of breakup time, identification of the fragment that, in the absence of winds, will travel the greatest distance in comparison to all other fragments.

(6) *Fragment class data.* The class name, boundaries of the class grouping parameters, and the number of fragments in any fragment class established in accordance with paragraph (c)(11) of this section.

(7) *Breakup altitude.* For breakup due to aerodynamic loads, inertial loads, and atmospheric reentry, identification of the range of altitudes at which breakup may occur.

(8) *Ballistic coefficient (β).* The mean and plus and minus three-sigma values for each fragment. A launch operator shall include graphs of the coefficient of drag (C_d) as a function of Mach number for the nominal and three-sigma beta variations for each fragment shape. Each graph must be labeled with the shape represented by the curve and reference area used to develop the curve. A launch operator shall provide a C_d vs. Mach curve for any axial, transverse, and tumble orientations for fragments that will not stabilize during free-fall conditions. For fragments that may stabilize during free-fall, a launch operator shall provide C_d vs. Mach curves for the stability angle of attack. If the angle of attack where the fragment stabilizes is other than zero degrees, a launch operator shall provide both the coefficient of lift (C_L) vs. Mach number and the C_d vs. Mach number curves. The equations for C_d vs. Mach curves shall also be provided.

(9) *Pre-flight propellant weight.* The initial preflight weight of solid and liquid propellant for each launch vehicle component that contains solid or liquid propellant.

(10) *Normal propellant consumption.* The nominal and plus and minus three-sigma solid and liquid propellant consumption rate, and pre-malfunction consumption rate for each component that contains solid or liquid propellant.

(11) *Fragment weight.* The mean and plus and minus three-sigma weight of each fragment.

(12) *Projected area.* The mean and plus and minus three-sigma axial, transverse, and tumbling areas for each fragment. This information is not required for those fragment classes classified as burning propellant classes as described in paragraph (e)(17) of this section.

(13) *Imparted velocities.* The maximum incremental velocity imparted to each fragment and the mean fragment of each fragment class created by flight termination system activation, or explosive or overpressure loads at breakup. The launch operator shall identify the velocity distribution as Maxwellian or shall define the distribution, including whether the specified maximum value is interpreted as a fixed value with no uncertainty.

(14) *Fragment type.* The fragment type for each fragment established in accordance with paragraphs (c)(2), (c)(3), and (c)(4) of this section.

(15) *Effective casualty area.* The effective casualty area established in accordance with paragraph (c)(9) of this section for each fragment and for the effective casualty area for the mean fragment of each fragment class.

(16) *Stage of origination.* The launch vehicle stage from which each fragment originated.

(17) *Burning propellant classes.* The propellant consumption rate for those fragments that burn during free-fall.

(18) *Contained propellant fragments, explosive or non-explosive.* For fragments defined as contained propellant fragments, whether explosive or non-explosive, a launch operator shall provide the initial weight of contained propellant and the consumption rate during free-fall. The initial weight of the propellant in a contained propellant fragment is the weight of the propellant before any of the propellant is consumed by normal vehicle operation or failure of the launch vehicle.

(19) *Solid propellant fragment snuff-out pressure.* The ambient pressure and the pressure at the surface of a solid propellant fragment, in pounds per square inch, required to sustain a solid propellant fragment's combustion during free-fall.

(20) *Other non-inert debris fragments.* For each non-inert debris fragment identified in accordance with paragraph (c)(4) of this section, a launch operator shall describe the diffusion, dispersion, deposition, radiation, or other hazard exposure characteristics used to determine the effective casualty area required by paragraph (c)(9) of this section.

(21) *Residual thrust dispersion.* For each thrusting or non-thrusting stage having residual thrust capability following a launch vehicle malfunction, a launch operator shall identify either the total residual impulse imparted or the full-residual thrust in foot-pounds as a function of break-up time. For any stage not capable of thrust after a launch vehicle malfunction, a launch operator shall identify the conditions under which the stage is no longer capable of thrust. For each stage that can be ignited as a result of a launch vehicle malfunction on a lower stage, a launch operator shall identify the effects and duration of the potential thrust, and the maximum deviation of the instantaneous impact point which can be brought about by the thrust. A launch operator shall provide the explosion effects of all remaining fuels, pressurized tanks, and remaining stages, particularly with respect to ignition or detonation of upper stages if the flight termination system is activated during the burning period of a lower stage.

(22) *Jettisoned body data.* A launch operator shall identify each scheduled jettison of any launch vehicle component, the jettison flight time, the number of jettisoned bodies resulting from each specific scheduled jettison, and the following:

(i) For a jettisoned body that will break up during reentry, the number of debris fragments, and the approximate weight, projected area, ballistic coefficient and nominal and three-sigma left crossrange, right-crossrange, uprange, and downrange impact range and the impact range distribution of each fragment. If the jettisoned body will stabilize, the launch operator shall provide the projected area as the stability angle of attack planform area of the jettisoned body normal to the drag force. If the jettisoned body will not stabilize, the projected area shall be the tumble area normal to the drag force.

(ii) Total weight of all jettisoned bodies and the weight of each jettisoned body.

(iii) For each jettisoned body, the aerodynamic reference area that is normal to the drag force and used to determine the drag coefficient data required by paragraph (e)(22)(iv) of this section.

(iv) The axial, transverse and tumbling C_d as a function of Mach number or subsonic and supersonic W/C_dA for each jettisoned body. The C_d as a function of Mach number data are to be provided in graphical format for the nominal and plus and minus three-sigma drag coefficients and shall cover the range of possible Mach numbers from zero to the maximum values during free-fall. A launch operator shall also identify whether each body is stable and, if so, at what angles of attack. For each jettisoned body that can stabilize during free-fall, a launch operator shall provide drag coefficient curves for the stability angle of attack. If the stability angle of attack is other than zero degrees, a launch operator shall also provide a graph of coefficient of lift (C_L) as a function of Mach number.

§ 417.211 Flight control lines analysis.

(a) *General.* A launch operator shall determine the geographic placement of flight control lines that define the region over which a launch vehicle will be allowed to fly and where any debris resulting from normal flight and any launch vehicle malfunction will be allowed to impact. A launch operator shall implement flight safety limits in accordance with § 417.213 and flight termination rules in accordance with § 417.113, to ensure that debris associated with a malfunctioning launch vehicle does not impact any populated or other protected area outside the flight control lines. Flight over any populated or other protected area may be performed when a launch operator establishes a gate through a flight control line in accordance with § 417.219.

(b) *Input.* A launch operator shall obtain the following information to perform a flight control lines analysis:

(1) *Geographic data.* Geographic data includes maps, charts, or digital data depicting the geographic region protected by the flight control lines. The data must include federal, state, local and launch site boundaries and any foreign territorial boundaries, including foreign territorial waters. Depictions of the launch area landmass must include, but need not be limited to, topographical features such as elevations, rivers, lakes, and canals. Launch area landmass depictions must also include significant structures and populated areas, such as bridges, roadways, railroads, towns and cities, airports, and launch points. Downrange area landmass depictions shall include cities with populations greater than 25,000 people, country borders, national capitals and the largest city in the country. For flight control lines that encompass planned impact areas for jettisoned launch vehicle components, the data must depict land, air, and sea routes that will be the subject of notices in accordance with § 417.121. Sources of acceptable geographic data may include the National Imagery and Mapping Agency, the United States Department of Commerce, and the National Oceanic and Atmospheric Administration.

(2) *Launch vehicle trajectory data.* Launch vehicle trajectory data must describe the limits of normal launch vehicle flight, and include the launch vehicle's instantaneous impact points for the nominal, three-sigma left, and three-sigma right trajectories and the fuel exhaustion trajectories as determined by a trajectory analysis performed in accordance with § 417.205.

(3) *Special areas or zones.* Special areas or zones must include geographic descriptions of any local, state, or federal special use areas or zones that require protection from impacting debris or that cannot accommodate the overflight of a launch vehicle.

(4) *Map errors.* A flight control lines analysis must identify direction and scale map distortions and errors as a function of distance from the point of tangency, from a parallel of true scale and true direction, or from a meridian of true scale and true direction. Map errors vary depending on the type of map projection used, such as cylindrical, conic, or plane projections used to project a round body onto a flat surface sheet. A launch operator shall select a map with a projection that accommodates the plotting technique to be used in accordance with paragraph (d) of this section. Information on calculating the error attributable to the various map projections is available from the Department of the Interior, United States Geological Survey, Geological Survey Bulletin 1532.

(5) *Tracking errors.* A flight control lines analysis must identify the crossrange, uprange, and downrange launch vehicle tracking errors in the domain of the data used to make flight control decisions, such as drag corrected impact prediction, instantaneous impact point, present position, and body attitude, or one or more combinations of these. If actual tracking error information is not available at the time of the analysis, a launch operator may use a conservative tracking error estimate. If a conservative estimate is used, a launch operator shall clearly and convincingly demonstrate that the conservative estimate exceeds the tracking source manufacturer's predicted tracking error by at least 20%. For each tracking source used for all flight termination decisions, a flight control line analysis must account for each source of significant tracking error. Sources of significant tracking error include, but need not be limited to, the following:

(i) *Radar errors.* Where radar tracking is used, a flight control lines analysis must account for radar errors due to the combination of solar heating effects, internal and external pedestal variations, antenna variations, target dependencies, signal propagation variations, refraction variations, transmitter variations, ranging variations, receiver variations, data handling effects, servo variations, and signal processing variations.

(ii) *Global Positioning System (GPS) errors.* Where GPS tracking is used, a flight control lines analysis must account for GPS errors due to the combination of satellite clock error, ephemeris error, receiver or translator errors, delays due to satellite equipment, multi-path errors, atmosphere or ionosphere distortions, selective availability and geometric dilution of precision estimates.

(iii) *Optical errors.* Where optical tracking is used, a flight control lines analysis must account for optical tracking errors due to the combinations of azimuth and elevation biases, pitch and roll variations, non-orthogonality, optical skew, lens droop, refraction variations, atmosphere and ionosphere distortions, data handling effects, servo variations, and signal processing variations.

(c) *Flight control line constraints.* A launch operator shall apply the following constraints when generating flight control lines.

(1) Flight control lines must not extend on land beyond the area controlled by the launch operator or the launch site operator. A launch operator may establish flight control lines to protect personnel or facilities located within the area controlled by the launch operator or launch site operator. A launch operator shall establish flight control lines to protect any launch-viewing site with public access within the area controlled by the launch operator or launch site operator.

(2) Flight control lines must not intersect a foreign territorial boundary, including territorial waters, as recognized by the United States.

(3) A launch operator shall ensure that a positive mission success margin separates the launch vehicle's debris dispersion as a function of time during normal flight from the flight control lines as depicted in figure 417.211–1 of this section. This separation ensures that the flight of a normally performing launch vehicle will not be terminated. The flight control lines analysis must demonstrate a mission success margin for the most conservative normal launch vehicle trajectory relative to the flight control lines for all points along the trajectory. The launch vehicle debris dispersion at each point in time along the launch vehicle trajectory shall be determined in accordance with the flight safety limits analysis required by § 417.213.

(4) Flight control lines must border the boundaries of all protected areas. Although protected areas are populated areas and other areas from which the potential adverse effects of a launch vehicle's flight must be isolated, a protected area is not necessarily a land area. For example, a protected area may include ocean areas with high shipping or fishing traffic.

(5) Each flight control line, whether over land or water, must be offset from

any populated or other protected area by no less than a distance equal to the total of the map and launch vehicle tracking errors. Because the source of tracking data may vary throughout flight, the tracking error offset for a protected area must account for errors due to the source of tracking data for the period of flight during which the launch vehicle could reach the protected area. Map and tracking error offsets are depicted in figures 417.211–2 and 417.211–3 of this section. A launch operator may use a conservative total offset distance to simplify analysis and ease implementation of the flight control lines only if the launch operator demonstrates through the licensing process that its offset distance is greater than or equal to the total of the map and tracking errors for all protected areas.

(d) *Plotting.* A launch operator shall plot flight control lines in accordance with the following:

(1) Flight control lines must be comprised of connected geodesic-line segments of variable length that may or may not form a closed polygon, depending on the inclusion of a gate in accordance with § 417.219.

(2) When plotting flight control lines, a launch operator shall ensure that data source oblate spheroid latitude and longitude coordinates are transformed to the oblate spheroid used for the map on which the flight control lines are projected.

(3) On a map with a scale greater than or equal to 1:1,000,000 in/in, a straight flight control line segment must have a scaled distance less than or equal to 7.5 times the map scale. On a map with a scale less than 1:1,000,000 in/in, a straight flight control line segment must have scaled distances of 100 nautical miles or less.

(4) *Mechanical plotting.* A launch operator may use mechanical drafting equipment to plot the location of flight control lines on a map. The map must have a conformal conic projection.

(5) *Semi-automated plotting.* A launch operator may use range and bearing techniques to plot latitude and longitude points on a map that has a cylindrical, conic, or plane (azimuthal) projection. Each flight control line segment must be a geodesic. Information on the various techniques for performing these calculations is available from the FAA upon request.

(6) *Fully automated plotting.* A launch operator may plot flight control lines using geographic information system software, a computer aided design system, or a computerized drawing program and global mapping data using the map projection supported by the software application. The launch operator shall ensure that each flight control line segment generated by such an automated process is a geodesic.

(e) *Flight control line analysis products.* The flight control lines analysis products, submitted to the FAA in accordance with § 417.203(c), must include:

(1) A graphic depiction of all flight control lines, the launch point, all launch site boundaries, surrounding geographic area, all protected area boundaries, and the nominal and three-sigma launch vehicle instantaneous impact point ground traces from the launch point to a distance 100 nautical miles downrange. Within 100 nautical miles of the launch point, the smallest map scale used to show flight control lines must be less than 1:15,000 inch/inches and greater than or equal to 1:250,000 inch/inches. The launch vehicle trajectory instantaneous impact points must be plotted with sufficient frequency to provide a conformal representation of the launch vehicle's instantaneous impact point ground trace curvature.

(2) A graphic depiction of all flight control lines, protected areas, and the nominal and three-sigma instantaneous impact point ground traces from liftoff through orbital insertion or final stage impact. The smallest map scales for this depiction must be greater than or equal to 1:20,000,000 inch/inches.

(3) A tabular description of the flight control lines. This must include the geodetic latitude (positive north of the equator) and longitude (positive east of the Greenwich Meridian) coordinates of both endpoints of each flight control line segment in units of decimal degrees. The quantitative values of the flight control line coordinates must be rounded to the number of significant digits that can reasonably be determined from the uncertainty of the measurement device used to determine the flight control lines. Flight control line coordinates shall be limited to a maximum of six decimal places.

(4) A map error table of direction and scale distortions as a function of distance from the point of tangency from a parallel of true scale and true direction or from a meridian of true scale and true direction. A launch operator shall provide a table of tracking error as a function of downrange distance from the launch point for each tracking station used to make flight safety control decisions. A launch operator shall submit a description of the method, showing equations and example calculations, used to determine the tracking error. The interval between map and tracking error data points within 100 nautical miles of the reference point shall be one data point every 10 nautical miles, including the reference point. The interval between map and tracking error data points beyond 100 nautical miles from the reference point shall be one data point every 100 nautical miles out to a distance that includes all flight control line endpoints.

(5) A launch operator shall provide the equations used for geodetic datum conversions and one sample calculation for converting the geodetic latitude and longitude coordinates between the datum ellipsoids used. A launch operator shall provide any equations used for range and bearing computations between geodetic coordinates and one sample calculation.

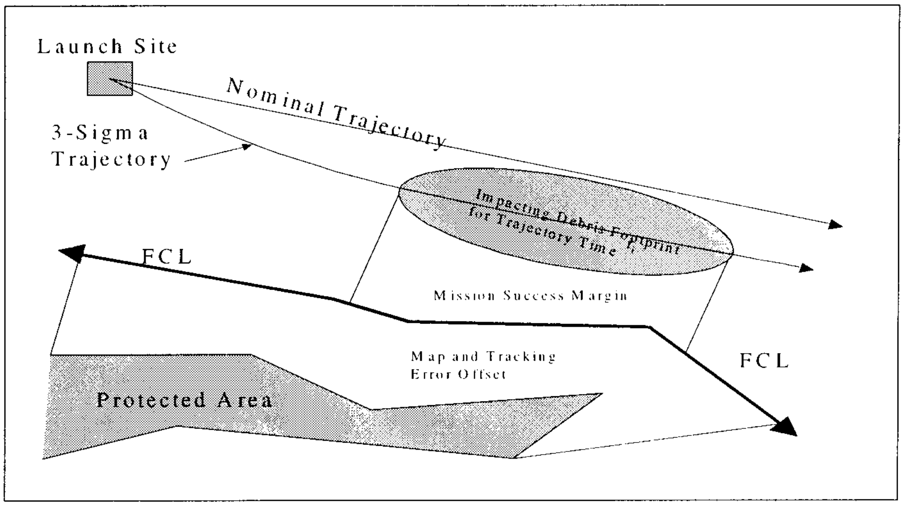


Figure 417.211-1, Illustration of Flight Control Line (FCL) Offsets and Mission Success Margin

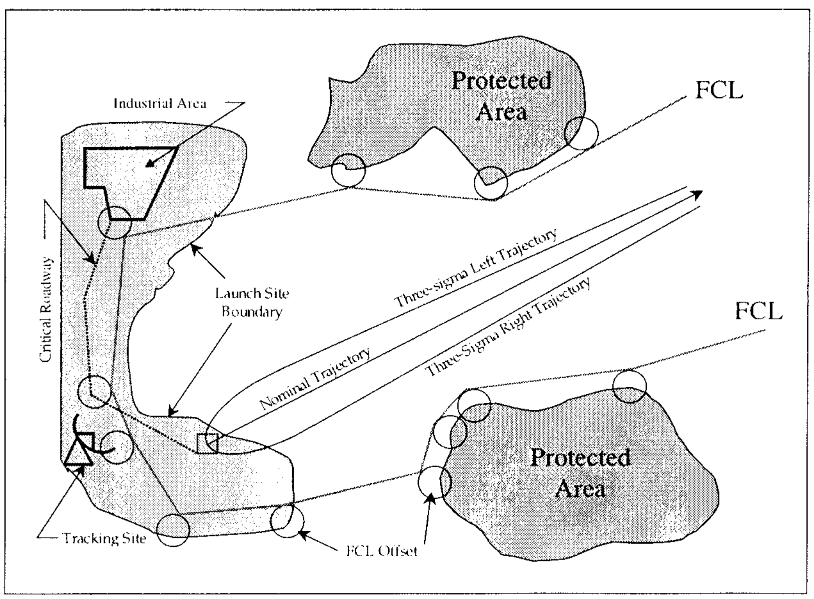


Figure 417.211-2, Illustration of Flight Control Line (FCL) Offsets

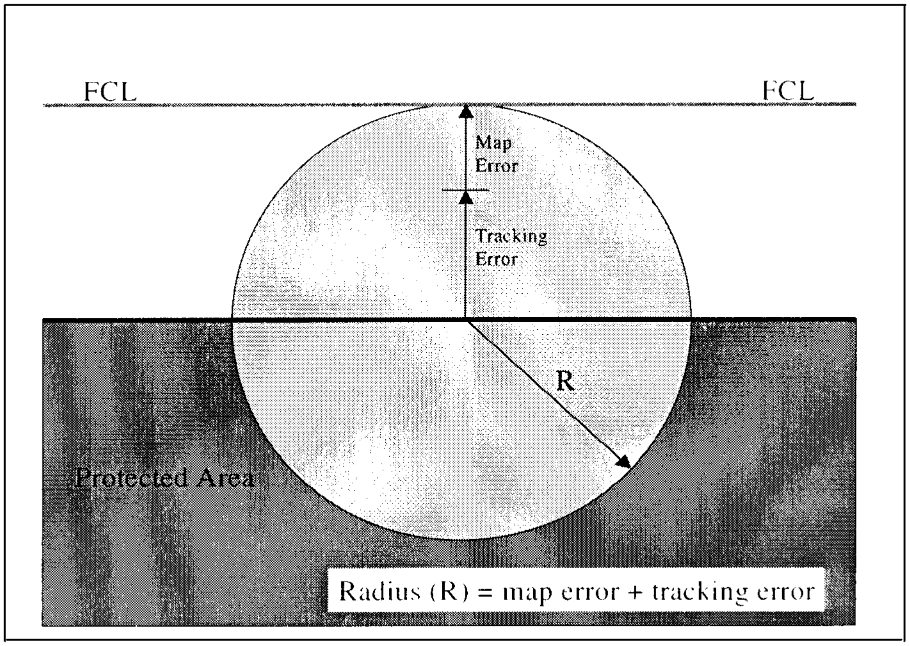


Figure 417.211-3, Detailed Illustration of Flight Control Line (FCL) Offset

§ 417.213 Flight safety limits analysis.

(a) *General.* A launch operator shall perform a flight safety limits analysis to establish criteria for terminating a malfunctioning launch vehicle's flight. The criteria must ensure that the launch vehicle's debris impact dispersion does not extend beyond the flight control lines established in accordance with § 417.211. A launch operator's flight safety limits analysis must determine the temporal and geometric extents of a launch vehicle's debris impact dispersion on the Earth's surface resulting from any planned debris impacts and potential debris impacts created by unplanned events for any point during flight. At any time during a launch vehicle flight, a launch operator's flight safety limits must provide for the identification of a launch vehicle malfunction and the termination of flight before any adverse effects of the resulting debris could reach outside the flight control lines.

(b) *Flight safety limits constraints.* A launch operator shall apply the following constraints when establishing flight safety limits:

(1) A launch operator's flight safety limits must account for malfunctions occurring during the time from launch vehicle first motion through flight to the no longer endanger time determined in accordance with § 417.221(c).

(2) A launch operator's flight safety limits shall account for a worst case debris impact dispersion to ensure that the flight safety system is activated in sufficient time to keep the adverse effects of any debris impacts from extending beyond the flight control lines. The worst case dispersion shall be developed by combining dispersion effects in a direction that maximizes the dispersion envelope in the uprange, downrange, right crossrange and left crossrange directions.

(3) A launch operator's flight safety limits must, for a flight termination at any time during launch vehicle flight, represent the extent of the debris impact dispersion, in the uprange, downrange and crossrange directions on the Earth's surface. The surface area bounded by the debris impact dispersion represents the geographic area that will be exposed to the adverse effects of debris impact resulting from flight termination at a given time during flight.

(4) Each debris impact area determined by a launch operator's flight safety limits analysis shall be offset from the flight control lines in a direction away from populated or other protected areas. The size of the offset shall be determined in accordance with paragraph (a) of this section based on impact dispersion parameters that include, but need not be limited to:

(i) Bounce, splatter and skip of inert debris.

(ii) Critical over-pressures greater than or equal to 3.0 psi resulting from detonation of explosive debris.

(iii) Malfunction turns.

(iv) Malfunction imparted velocities.

(v) Winds. Wind data shall be determined in accordance with § 417.217.

(vi) Residual thrust.

(vii) Guidance dispersions.

(viii) Variations in drag predictions of fragments and debris.

(ix) Other impact dispersion parameters peculiar to the launch vehicle.

(x) Debris impact location uncertainties generated from conditions prior to, and after, activation of the flight termination system.

(c) *Flight safety limits analysis products.* The products of a flight safety limits analysis to be submitted to the FAA in accordance with § 417.203(c) must include the following:

(1) A description of each method used to develop and implement the flight safety limits. The description must include equations and example computations used in the flight safety limits analysis.

(2) A description of how each analysis method meets the analysis requirements and constraints of this section, including how the method produces a worst case scenario for each impact dispersion area.

(3) A description of how the results of the analysis are used in relation to flight control lines to protect populated and other protected areas.

(4) A graphical depiction of the flight safety limits aligned on the nominal flight azimuth, the flight control lines, surrounding landmass areas within 100 nm of the flight control lines, and labeled geodetic latitude and longitude lines from liftoff to orbital insertion or the end of flight. The flight safety limits

shall be shown at trajectory time intervals sufficient to depict the mission success margin between the flight safety limits and the flight control lines. The flight safety limits shall be plotted using the same scales and frequency of plotted points as required for the flight control lines in accordance with § 417.211(e)(1) and (2).

(5) A tabular description of the flight safety limits including the geodetic latitude and longitude for each flight safety limit boundary, the nominal and three-sigma total launch vehicle velocities corresponding to each flight safety limit boundary, the altitude height from the sub-vehicle point to the launch vehicle present position, and the range and bearing from the sub-vehicle point to the vacuum impact point. This data must show the same number of significant digits as the flight control line data submitted in accordance with § 417.211(e)(3).

§ 417.215 Straight-up time analysis.

(a) *General.* A launch operator shall perform a straight-up time analysis to determine the latest time-after-liftoff by which flight termination must be initiated were a launch vehicle to malfunction and fly a vertical or near vertical trajectory (a straight-up trajectory) rather than follow a normal trajectory downrange.

(b) *Straight-up time constraints.* The following constraints apply to straight-up time analysis:

(1) A straight-up trajectory shall be defined as the flight path flown by a launch vehicle that produces vertical or near-vertical flight, beginning at liftoff.

(2) Straight-up time shall be defined as the latest time-after-liftoff, assuming a launch vehicle flies a straight-up trajectory, at which activation of the launch vehicle's flight termination system or spontaneous breakup of the launch vehicle would not cause debris or critical over-pressure to cross over any flight control line established in accordance with § 417.211.

(3) A straight-up-time analysis must account for the following:

(i) Launch vehicle trajectory.

(ii) Drag impact point of each debris fragment.

(iii) Wind effects on the drag impact point of each debris fragment.

(iv) Residual thrust effects on drag impact point of each debris fragment.

(v) Explosion velocity effects on the drag impact point of each debris fragment.

(vi) Malfunction-turn effects on the drag impact point of each debris fragment.

(vii) Distance from the launch point to any flight control line.

(viii) Delay time from the initiation of a flight termination command to actual flight termination.

(ix) Effective casualty area of each debris fragment determined in accordance with § 417.209(c)(9).

(c) *Straight-up time analysis products.* The products of a straight-up-time analysis to be submitted to the FAA in accordance with § 417.203(c) must include the following:

(1) Straight-up time.

(2) A description of the methodology used to determine straight-up time.

(3) At least one example set of straight-up-time calculations.

§ 417.217 Wind analysis.

(a) *General.* A launch operator shall perform a wind analysis to determine wind magnitude and direction as a function of altitude for the air space through which its launch vehicle will fly and for the airspace through which malfunction and jettisoned debris will travel. The products of this analysis must satisfy the input requirements of the other flight safety analyses that are dependent on wind data. A launch operator operating a suborbital launch vehicle flown with a wind weighting safety system shall meet the applicable requirements in this section and the wind analysis requirements of § 417.235(e) and appendix C of this part.

(b) *Input.* A launch operator's wind analysis must use statistical wind data, measured wind data, or a combination of statistical and measured wind data as input unless otherwise required for a specific vehicle or mission. Wind analysis input data must satisfy the following requirements:

(1) *Statistical wind data.* Statistical wind input data must include altitude, month, number of observations, mean east-west component of wind speed, standard deviation of east-west component of wind speed, mean north-south component of wind speed, standard deviation of north-south component of wind speed, and the correlation coefficient of wind components. Sources of statistical wind data include, ''Information on the Global Gridded Upper Air Statistics (GGUAS),'' dated 1980–1995, and Volume 1.1 of the same title, dated March 1996. These documents are available from the Climate Applications Branch, National Climatic Data Center, 151 Patton Ave, Room 468, Asheville, NC 28801–5001.

(2) *Measured wind data.* Measured wind input data must include altitude, wind magnitude, and wind direction.

(c) *Wind analysis constraints.* A wind analysis must incorporate the following constraints:

(1) *Altitude.* A launch operator's wind analysis must provide wind data from the altitude of the launch point to an altitude of 100,000 feet.

(2) *Azimuth.* For each of the other analyses that are dependent on wind analysis products, a launch operator shall determine wind magnitudes as a function of altitude for the worst-case wind direction (azimuth). This generally requires the determination of wind magnitudes along an azimuth that is in the direction of, and normal to, the nearest protected area such that the wind would carry any hazard toward the protected area. The wind analysis products must demonstrate how each selected azimuth represents the worst-case for its application.

(3) *Statistical winds.* When using statistical wind input data, a launch operator shall ensure that the wind analysis products represent three-sigma statistical winds assuming a one-sided normal univariate Gaussian distribution. In the absence of inter- and intra-altitude correlation coefficients, a launch operator shall ensure that wind analysis products do not exceed the altitude intervals supplied by the statistical wind input data source. Any temporal combination of statistical wind data must satisfy the following requirements:

(i) Statistical wind data shall be derived from a single data source.

(ii) Any temporal combination of statistical wind data must account for the source's temporal division of samplings, such as weeks, months, or quarters.

(iii) When performing a flight safety analysis with statistical wind data, a launch operator shall use the worst case wind from the statistical wind data source's individual temporal divisions as a function of altitude interval.

(iv) When using statistical wind data that provides height intervals in terms of millibar pressure, a launch operator shall use the mean height for the range of the temporal profile.

(4) *Measured and forecasted winds.* When using flight-day wind measurements, a launch operator shall forecast wind conditions to account for any changes that may occur between the time the measurements are made and the scheduled flight time and any planned impact time. A launch operator shall forecast wind conditions based on wind measurements taken not more than eight hours before the scheduled liftoff time and any predicted impact time. A launch operator's forecasted wind data must include a scalar wind speed that accounts for the wind measurement error created by the latency of the measured data and any

other error created by the wind measurement methods used. The following requirements apply when using flight-day wind measurements:

(i) *Launch area forecasted winds.* Using the last measured wind, a launch operator shall forecast the launch area wind speed and wind direction as a function of altitude for the scheduled flight time.

(ii) *Downrange area forecasted winds.* Using the last measured wind, a launch operator shall forecast for any predicted impact time, the downrange area wind speed and wind direction as a function of altitude in the region of the no-wind three-sigma impact dispersion of each normally jettisoned stage or component.

(5) *Wind data for trajectory analysis.* A launch operator shall select a wind profile for launch vehicle trajectory development that is as severe as the worst wind conditions under which flight might be attempted. (This wind is not necessarily the wind above which the launch vehicle would lose control or the launch vehicle would fail to maintain structural integrity. Other mission concerns may limit wind conditions.) The following constraints apply to wind analysis performed to determine the wind data needed for the development of the specific launch vehicle trajectories required by § 417.205(d):

(i) *Three-sigma maximum performance trajectory and fuel exhaustion trajectory.* For this trajectory, a wind analysis must determine the wind magnitude for each trajectory computation point, in the azimuthal direction zero degrees to the projection of the launch vehicle velocity vector azimuth into the horizontal plane that is tangent to the ellipsoidal Earth model at the launch vehicle sub-vehicle point.

(ii) *Three-sigma minimum performance trajectory.* For this trajectory, a wind analysis must determine the wind magnitude at each trajectory computation point, in the azimuthal direction 180 degrees to the projection of the launch vehicle velocity vector azimuth into the horizontal plane that is tangent to the ellipsoidal Earth model at the launch vehicle sub-vehicle point.

(iii) *Three-sigma left lateral trajectory.* For this trajectory, a wind analysis must determine the wind magnitude at each trajectory computation point, in the azimuthal direction 90 degrees counter-clockwise to the projection of the launch vehicle velocity vector azimuth into the horizontal plane that is tangent to the ellipsoidal Earth model at the launch vehicle's sub-vehicle point.

(iv) *Three-sigma right lateral trajectory.* For this trajectory, a wind analysis must determine the wind magnitude at each trajectory computation point, in the azimuthal direction 90 degrees clockwise to the projection of the launch vehicle velocity vector azimuth into the horizontal plane that is tangent to the ellipsoidal Earth model at the launch vehicle's sub-vehicle point.

(6) *Flight safety limits.* A launch operator shall ensure that the statistical wind percentile used in developing flight safety limits in accordance with § 417.213 is such that when the flight safety limits are used during flight, a normally performing launch vehicle will not trigger flight termination. For example, a launch could not successfully take place at a given location for a given time of year where the statistical winds were such that the resulting launch vehicle debris impact dispersion, determined in accordance with § 417.213, would cross over the flight control lines, developed in accordance with § 417.211, during normal flight.

(7) *Flight constraints.* When using flight-day wind measurements, a launch operator shall ensure wind dispersion effects based on measured and forecasted wind conditions do not exceed any statistical wind dispersion effects used in developing flight safety limits. A launch operator shall implement launch safety rules, in accordance with § 417.113, that ensure that flight will not be initiated if forecasted winds based on flight-day wind measurements invalidate any wind assumption made when developing flight safety limits.

(d) *Wind analysis products.* The products of wind analysis to be submitted to the FAA in accordance with § 417.203(c) must include the following:

(1) *Statistical wind profiles.* A launch operator shall submit a graphic and tabular description of each statistical wind profile used as input for any other flight safety analysis and an explanation of how each profile provides the worst-case wind direction safety margin required by paragraph (c)(2) of this section. A launch operator shall identify each source of its statistical wind data and submit a single graph and table for each statistical percentile and wind direction combination as follows:

(i) *Graphic description.* A launch operator shall provide a graphical depiction of each statistical wind profile for a given wind direction, showing the wind speed as a function of altitude. This plot must have the vertical axis normal to, and centered on the horizontal axis, with negative wind speeds on the left of the vertical axis and positive wind speeds on the right of the vertical axis. Zero-altitude must be positioned at the intersection of the axes and the altitudes shall be positive in the up direction. The altitude increments must not exceed 1000 feet. Figure 417.217–1 provides an example of a statistical wind profile plot.

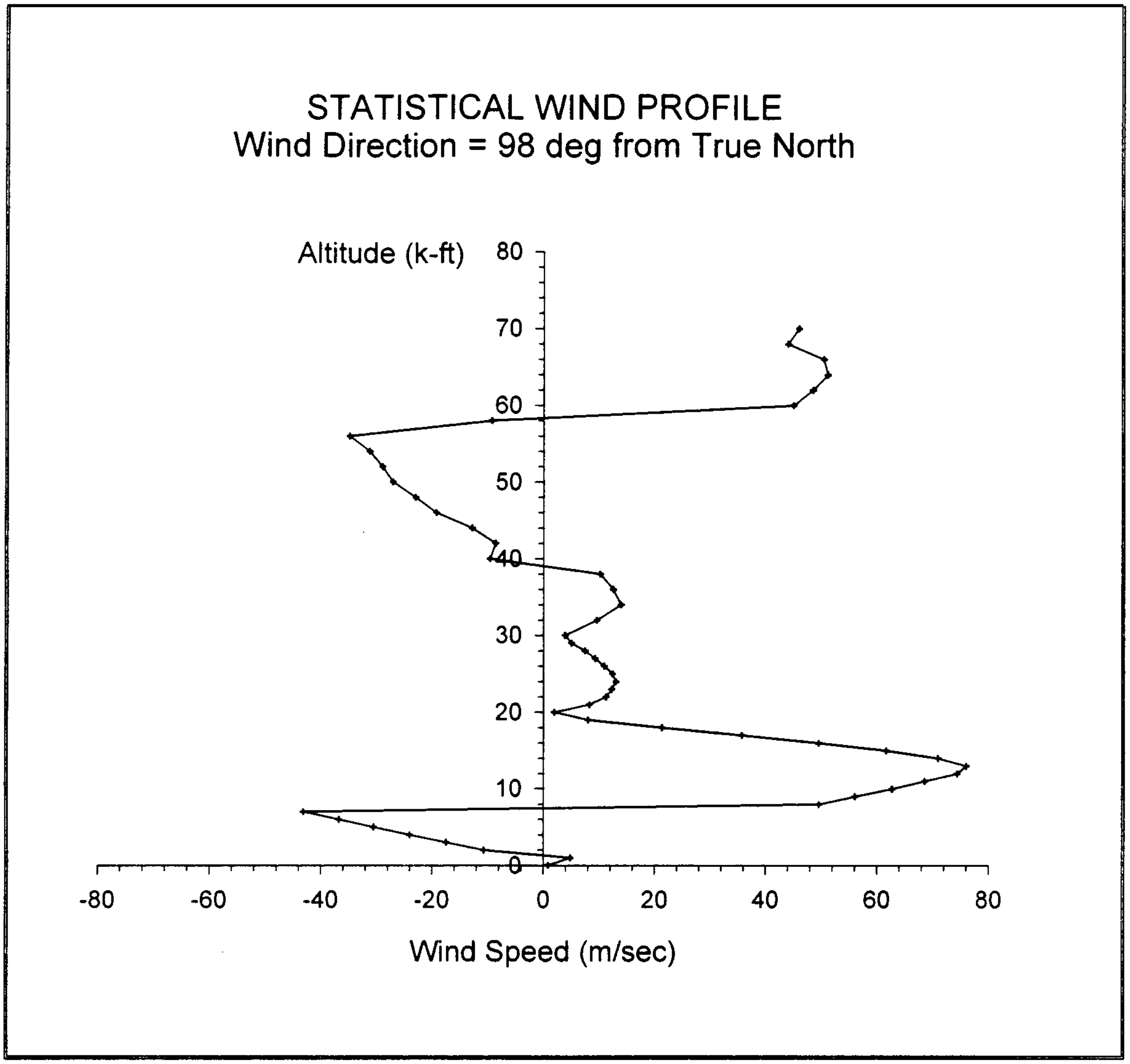


Figure 417-217-1, Example Statistical Wind Profile Plot

(ii) *Tabular description.* A launch operator shall provide a tabular description of each statistical wind profile, including the statistical wind percentile and direction of wind as the title of each table. The altitude and wind speed data must be in columnar format with altitude in column 1 and wind speed to the right side of column 1 in column 2. Altitude shall be in feet, rounded to the nearest foot, and wind speeds shall be in feet per second, rounded to two decimal places. Each altitude increment must not exceed 1000 feet.

(2) *Measured wind profile.* When using measured wind data, a launch operator shall submit a description of its process for measuring and forecasting winds in the launch area and downrange areas in accordance with paragraph (c)(4) of this section. A launch operator shall provide a tabular description of each measured wind profile in the post launch report required by § 417.117(h). Each table shall include the launch vehicle identification, mission name, date of the measurement, time of the measurement, and the measurement source. The tabular wind data shall include the altitude, wind speed, and wind direction in columnar format, with altitude in column 1, wind speed to the right side of column 1 in column 2 and wind direction to the right of column 2 in column 3. Altitude shall be in feet, rounded to the nearest foot, wind speeds shall be in feet per second, rounded to two decimal places, and wind direction shall be in degrees measured from True North, rounded to one decimal point. Each altitude increment must not exceed 1000 feet.

(3) *Flight constraint wind data.* A launch operator shall provide the wind magnitude and wind direction information that the launch operator used to develop any wind flight constraints in accordance with paragraph (c)(7) of this section.

(4) *Wind data source information.* A launch operator shall submit a description of each wind data source, including the type of equipment used to obtain the data, measurement accuracy, and data latency to the flight safety wind analysis process.

§ 417.219 No-longer-terminate (gate) analysis.

(a) *General.* A launch operator shall perform an analysis to determine the portion, referred to as a gate, of a flight control line or other flight safety limit boundary, through which a launch vehicle's tracking icon is allowed to proceed without a launch operator being required to terminate flight. A tracking icon is the representation of a launch vehicle's present position or instantaneous impact point position displayed to a flight safety official at the flight safety official console during real-time tracking of the launch vehicle's flight. A launch operator may use a gate for planned launch vehicle flight over a populated or other protected area only if the launch can be accomplished while meeting the public risk criteria of § 417.107(b).

(b) *No-longer-terminate (gate) analysis constraints.* The following analysis constraints apply to a gate analysis.

(1) For each gate in a flight safety limit boundary, the criteria used for determining whether to allow passage through the gate or to terminate flight at the gate must use all the same launch vehicle flight status parameters as the criteria used for determining whether to terminate flight at the flight safety limit boundary developed in accordance with § 417.213. For example, if the flight safety limits are a function of instantaneous impact point location, the criteria for determining whether to allow passage through a gate in the flight safety limit boundary must also be a function of instantaneous impact point location. Likewise, if the flight safety limits are a function of drag impact point, the gate criteria must also be a function of drag impact point.

(2) For each established gate, the analysis must account for:

(i) Launch vehicle tracking and map errors.

(ii) Launch vehicle plus and minus three-sigma trajectory limits.

(iii) Debris impact dispersions.

(3) A gate must restrict a launch vehicle's normal trajectory ground trace, within three-sigma of nominal, to a geographic overflight region specifically defined for that gate.

(c) *No-longer-terminate (gate) products.* The products of a gate analysis to be submitted to the FAA in accordance with § 417.203(c) must include the following:

(1) A launch operator shall describe the methodology used to establish each gate.

(2) A launch operator shall submit a tabular description of the input data.

(3) A launch operator shall submit the analysis computations performed to determine a gate. If a launch involves more than one gate and the same methodology is used to determine each gate, the launch operator need only submit the computations for one of the gates.

(4) A launch operator shall submit a graphic depiction of each gate. A launch operator shall provide a small-scale depiction showing latitude and longitude grid lines, flight control lines, flight safety limits, landmass outlines, and nominal and three-sigma trajectory ground traces in their entirety. A launch operator shall also provide a large-scale depiction showing latitude and longitude grid lines, flight control lines, flight safety limits, landmass overflight regions, applicable portions of the nominal and three-sigma trajectory ground traces, and applicable predicted impact dispersion outlines. A launch operator shall show the gate latitude and longitude labels and the map scale on both depictions. Figures 417.219–1 and 417.219–2 provide examples of the gate depictions for overflight of Africa when launching from Florida.

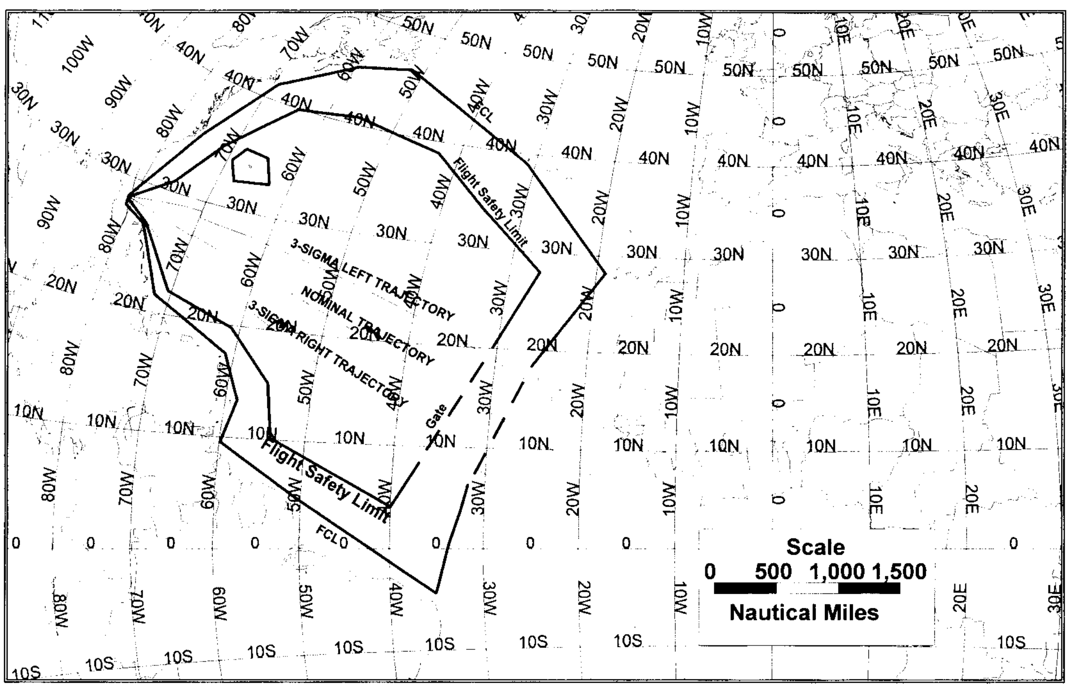


Figure 417.219-1, Example Gate Depiction (Small Scale)

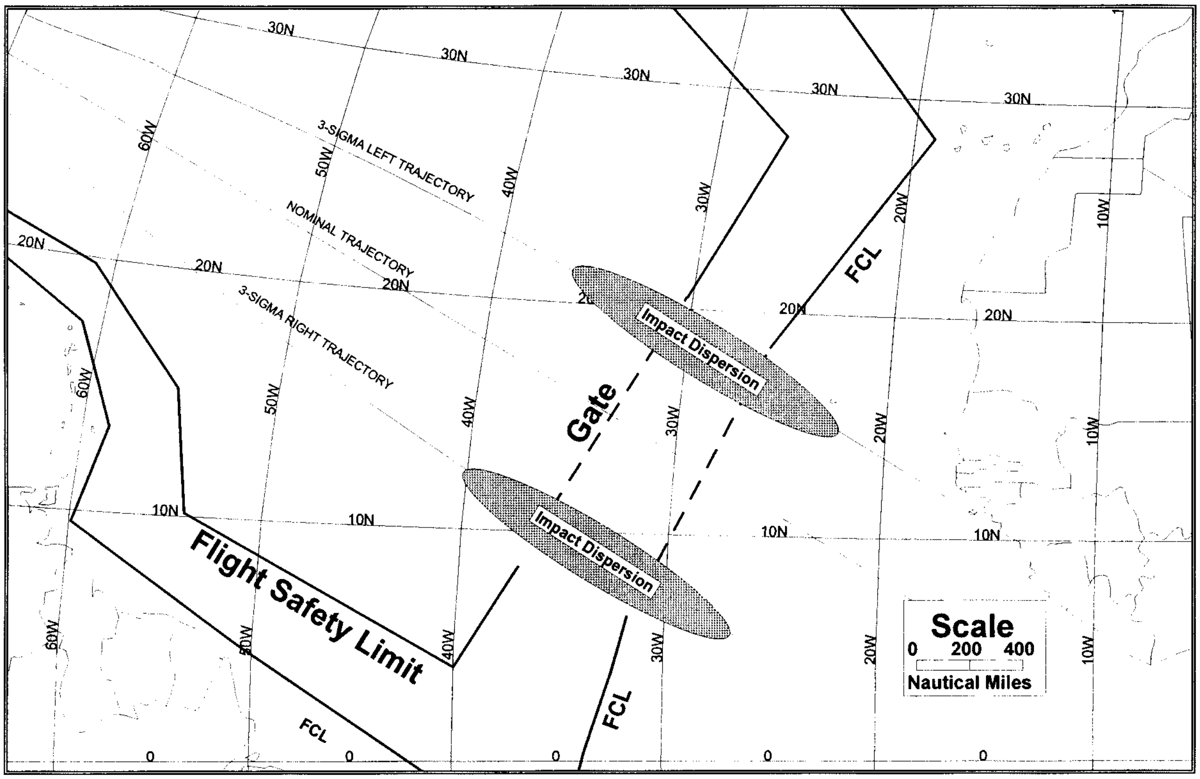


Figure 417.219-2, Example Gate Depiction (Large Scale)

§ 417.221 Data loss flight time analysis.

(a) *General.* A launch operator shall perform a data loss flight time analysis to determine the shortest elapsed thrusting time during which a launch vehicle can move from its normal trajectory to a condition where public endangerment is possible. A data loss flight time analysis must also determine an earliest destruct time, which is the earliest time after liftoff that public endangerment is possible, and a no longer endanger time, which is the time after liftoff that public endangerment is no longer possible from that time forward. Data loss flight times are used following any malfunction that prevents a flight control officer from knowing the location or behavior of a launch vehicle and that occurs during flight before the no longer endanger time is reached. A launch operator shall incorporate the results of its data loss flight time analysis into its flight termination rules in accordance with § 417.113(c).

(b) *Earliest destruct time.* A launch operator's earliest destruct time is the earliest possible time after liftoff that the launch vehicle debris impact dispersion could contact a flight control line. When calculating the earliest destruct time, the launch operator shall assume that the launch vehicle loses control immediately after ignition, that vehicle performance and orientation are optimized for maximum debris impact range, and all flight directions are equally likely. In all cases, the earliest destruct time must be greater than the predicted earliest tracking acquisition time plus the time delay determined in accordance with § 417.223.

(c) *No longer endanger time.* A launch operator's no longer endanger time is the time after liftoff after which flight termination need not be initiated even if a malfunction results in launch vehicle data loss. The no longer endanger time must be the point of orbital insertion or the nominal time after liftoff where, from that time onward, a launch vehicle no longer has the physical ability for its debris impact dispersion to contact a flight control line, whichever comes first.

(d) *Data loss flight times.* For each launch vehicle trajectory time, from the predicted earliest launch vehicle tracking acquisition time to the no longer endanger time, a launch operator shall determine the data loss flight time in accordance with the following:

(1) A data loss flight time must be the minimum thrusting time for a launch vehicle to move from a normal trajectory position to a position where a flight termination would cause the malfunction debris impact dispersion boundary to contact a flight control line.

(2) A launch operator's data loss flight time analysis must assume a malfunction that causes the launch vehicle to proceed from its position at the malfunction start time toward the flight control line, regardless of the probability of occurrence.

(3) The launch vehicle thrust vector shall be modeled to produce the highest instantaneous impact point range-rate that the vehicle is physically capable of producing at the trajectory time being evaluated, regardless of the probability of occurrence.

(4) Each data loss flight time must account for the system delays at the time of flight.

(5) A launch operator shall determine a data loss flight time for time increments of no less than one second along the launch vehicle nominal trajectory.

(e) *Data loss flight times products.* The products of a launch operator's data loss flight time analysis to be submitted in accordance with § 417.203(c) must include the following:

(1) A launch operator shall describe the methodology used in its data loss flight times analysis, including identification of all assumptions,

techniques, input data, and equations used. A launch operator shall submit calculations performed for one data loss flight time in the launch area and one data loss flight time in the downrange area. The launch area calculation time shall be separated from the downrange calculation time by at least 50 seconds, or by the greatest time otherwise feasible.

(2) A launch operator shall submit a launch area graphical description that shows flight control lines, flight safety limits, the launch point, the launch site boundaries, the surrounding geographic area, any protected areas, the earliest destruct time, the no longer endanger time (within any applicable scale requirements), latitude and longitude grid lines, and launch vehicle nominal and three-sigma instantaneous impact point ground traces from the launch point to 100 nautical miles downrange. Any launch vehicle trajectory instantaneous impact points must be plotted with sufficient frequency to provide a conformal estimate of the launch vehicle's instantaneous impact point ground trace curvature. A launch operator shall provide labeled latitude and longitude lines and the map scale on the depiction.

(3) A launch operator shall provide a downrange graphical description that shows the flight control lines, flight safety limits, all gates, protected areas, earliest destruct time, no longer endanger time, latitude/longitude grid lines, and any nominal and three-sigma instantaneous impact point ground traces from liftoff through orbital insertion or final stage impact. Any launch vehicle trajectory instantaneous impact points must be plotted with sufficient frequency to provide a conformal estimate of the launch vehicle's instantaneous impact point ground trace curvature. A launch operator shall provide labeled latitude and longitude lines and the map scale on the depiction.

(4) A launch operator shall provide a tabular description of the data loss flight times that includes malfunction start time and the geodetic latitude (positive north of the equator) and longitude (positive east of the Greenwich Meridian) coordinates of the intersection of the launch vehicle instantaneous impact point trajectory with the flight control line. The earliest destruct time and no longer endanger time shall be identified in the table. The tabular description must include data loss flight times for trajectory time increments not to exceed one second.

§ 417.223 Time delay analysis.

(a) *General.* A launch operator shall perform a time delay analysis to determine the mean elapsed time between the start of a launch vehicle malfunction and the final commanded flight termination. The time delay must include a flight safety official's decision and reaction time. A launch operator shall also determine the time delay plus and minus three-sigma values relative to the mean time delay.

(b) *Time delay analysis constraints.* A time delay analysis shall account for data flow rates and reaction times due to hardware and software and decision and reaction times due to personnel that comprise a launch operator's flight safety system as defined by subpart D of this part. A launch operator shall conduct time delay analyses for all data used by a flight safety official for making flight termination decisions. A launch operator's time delay analysis shall account for all significant causes of delay in receiving data. A launch operator's time delay analysis shall account for all delays caused by hardware and software, including, but not limited to, the following:

(1) *Tracking system.* A launch operator's time delay analysis must account for delays associated with the hardware and software that make up the launch vehicle tracking system, whether or not it is located on the launch vehicle, such as transmitters, receivers, decoders, encoders, modulators, circuitry and any encryption and decryption of data.

(2) *Display systems.* A launch operator's time delay analysis must account for delays associated with hardware and software that make up any display system used by a flight safety official to aid in making flight control decisions. A launch operator's time delay analysis must also account for any manual operations requirements, tracking source selection, tracking data processing, flight safety limit computations, inherent display delays, meteorological data processing, automated or manual system configuration control, automated or manual process control, automated or manual mission discrete control, and automated or manual failover decision control.

(3) *Flight termination system and command control system.* A launch operator's time delay analysis must account for delays and response times associated with flight termination system and command control system hardware and software, such as transmitters, decoders, encoders, modulators, relays and shutdown, arming and destruct devices, circuitry and any encryption and decryption of data.

(4) *Software specific time delays.* A launch operator's time delay analysis must account for delays associated with any correlation of data performed by software, such as timing and sequencing; data filtering delays such as error correction, smoothing, editing, or tracking source selection; data transformation delays; and computation cycle time.

(c) *Time delay analysis products.* The products of a launch operator's time delay analysis to be submitted in accordance with § 417.203(c) must include the following:

(1) A description of the methodology used to produce the time delay analysis.

(2) A schematic drawing that maps the flight control official's data flow time delays from the start of a launch vehicle malfunction through the final commanded flight termination on the launch vehicle, including the flight safety official's decision and reaction time. The drawings shall indicate major systems, subsystems, major software functions, and data routing.

(3) A tabular listing of each time delay source and its individual mean and plus and minus three-sigma contribution to the overall time delay. All time delay values shall be provided in milliseconds.

(4) The mean delay time and the plus and minus three-sigma values of the delay time relative to the mean value.

§ 417.225 Flight hazard areas analysis.

(a) *General.* A launch operator shall perform a flight hazard areas analysis to determine the regions of land, sea, and air (hazard areas) exposed to the potential adverse effects of planned and unplanned launch vehicle flight events and that must be monitored, controlled, or evacuated in order to ensure public safety. The flight hazard area requirements of this section apply to orbital and ballistic launch vehicles that use a flight termination system to protect the public. Flight hazard area requirements that apply to launch of an unguided suborbital rocket that use a wind weighting safety system are contained in § 417.235. A launch operator's flight hazard areas analysis for an orbital launch must satisfy the following:

(1) A launch operator shall use the methodologies for determining hazard areas for orbital launch provided in appendix A of this part. In addition, for both orbital and suborbital launch, a launch operator shall use the methodologies of paragraphs C417.5(f)–(i) of appendix C of this part for determining ship and aircraft hazard

areas for planned debris impacts. A launch operator shall use the methodologies for determining hazard areas provided in appendixes A and C of this part unless the launch operator demonstrates, clearly and convincingly, through the licensing process that another methodology achieves an equivalent level of safety.

(2) A launch operator's analysis must account for all adverse effects and hazards from planned and unplanned launch vehicle flight events, including impacts of inert components, blast effects due to explosive debris impact, projected debris due to debris impact, release of any toxic substance from normal propellant combustion, vehicle breakup or impacting debris, and any other hazard due to planned or unplanned launch vehicle events that may be unique to a launch.

(3) A flight hazard areas analysis must account for debris resulting from planned flight and potential launch vehicle failure determined according to the debris analysis of § 417.209. A launch operator shall determine the debris impact points and dispersions in accordance with the following:

(i) A flight hazard areas analysis must account for drag corrected impact points and dispersions for each class of impacting debris as a function of trajectory time.

(ii) The dispersion for each debris class must account for the position and velocity state vector dispersions at breakup, the delta velocities incurred from breakup produced by either aerodynamic forces or explosive forces from flight termination system activation, the variance produced by winds, variance in ballistic coefficient for each debris class, and any other dispersion variances.

(iii) A launch operator's flight hazard areas analysis may account for the survivability of debris fragments that are subject to reentry aerodynamic forces or heating. A debris class may be eliminated from the analysis if the launch operator performs a survivability analysis and demonstrates that the debris will not survive to impact.

(4) A launch operator's analysis must account for launch vehicle trajectory dispersion effects in the surface impact domain. The analysis must account for trajectory variations, including plus and minus three-sigma variations in the jettison time for each intentionally jettisoned launch vehicle component.

(5) A launch operator's analysis must define the ship and aircraft hazard areas for which Notices to Mariners (NOTMAR) and Notices to Airman (NOTAM) must be issued and the areas where the launch operator must survey in accordance with § 417.121(f). The results of a launch operator's flight hazard areas analyses shall be used to establish launch safety rules in accordance with § 417.113.

(b) *Flight hazard area.* For each launch, a launch operator shall establish an overall flight hazard area as an area surrounding the launch point that encompasses all hazard areas and safety clear zones established in accordance with paragraphs (d) through (h) of this section. Figure 417.225–1 illustrates a flight hazard area for a coastal launch site. Figure 417.225–2 illustrates a flight hazard area for a land locked launch site. A flight hazard area must account for planned launch vehicle events and potential launch vehicle failures, including any potential commanded flight termination. A flight hazard area must be contained inside the flight control lines established in accordance with § 417.211.

(c) *Flight corridor.* For regions outside the flight hazard area, a launch operator shall define a flight corridor, which extends downrange from a flight hazard area as illustrated by figure 417.225–3. A flight corridor must be bounded by the flight control lines established in accordance with § 417.211, and must include any land overflight permitted by a gate established in accordance with § 417.219. Any land overflight area must be bounded by a five-sigma cross range trajectory dispersion about the nominal launch vehicle trajectory. A flight corridor must extend for all downrange positions from the flight hazard area to the no longer endanger time determined in accordance with § 417.221(c).

(d) *Debris impact hazard area.* A launch operator shall determine a debris impact hazard area that accounts for the impact of debris resulting from a commanded flight termination or spontaneous breakup due to a launch vehicle failure and accounts for individual impact locations for each non-inert debris fragment, including explosive or toxic debris. A launch operator shall ensure that a debris hazard area is contained within the flight hazard area and is derived in accordance with the following:

(1) Except as permitted by paragraph (d)(2) of this section, a debris hazard area must be bounded by an individual casualty contour that defines where the individual casualty probability (P_C) criteria of 1×10^{-6} required by § 417.107(b) would be exceeded if one person were assumed to be in the open and inside the contour during launch vehicle flight. A launch operator shall determine an individual casualty contour in accordance with the following:

(i) The determination of an individual casualty contour must be an iterative process of evaluating person location points in the uprange and downrange directions and both crossrange directions. A launch operator shall use the methodology contained in A417.7 of appendix A of this part unless the launch operator demonstrates, clearly and convincingly, through the licensing process that another methodology achieves an equivalent level of safety.

(ii) For each uprange or downrange distance along the nominal instantaneous impact point trace, individual person location points shall be investigated at progressively increasing crossrange distances until one is found that produces an individual casualty probability of less than the 1×10^{-6} criteria.

(iii) As impact points being investigated progress downrange or uprange, the individual casualty contour will come to a close at a point where the individual casualty criteria can no longer be exceeded for any person located further downrange or uprange on the nominal instantaneous impact point trace.

(2) Rather than calculating an individual casualty contour uprange of the launch point as required by paragraph (d)(1) of this section, a launch operator may elect to define the uprange debris impact hazard area as an area surrounding the launch point with a radius equal to the greatest inert debris impact radius and any additional radius due to non-inert debris.

(3) The input for determining a debris impact hazard area must include the results of the trajectory analysis required by § 417.205, the malfunction turn analysis required by § 417.207, the wind analysis required by § 417.217, and the debris analysis required by § 417.209 to define the impact locations of each class of debris established by the debris analysis.

(4) A debris impact hazard area must account for the greatest potential debris impact dispersion. The analysis must assume that the launch vehicle flies until it exceeds a flight safety limit associated with the greatest potential debris impact displacement. The analysis must also assume trajectory conditions that maximize a change in debris impact distance during the flight safety system delay time determined in accordance with § 417.223 and use a debris model that is representative of a flight termination or aerodynamic breakup, whichever results in the greatest debris dispersion. For each launch vehicle breakup event, the analysis must account for trajectory and breakup dispersions, variations in

debris class characteristics, and debris dispersion due to wind.

(5) A debris impact hazard area must account for each impacting debris fragment classified in accordance with § 417.209(c). A debris impact hazard area need not account for debris with a ballistic coefficient of less than three.

(6) The analysis must account for classes of debris and the maximum number of debris fragments within a debris class in accordance with § 417.209(c). Debris classes shall be defined for potential launch vehicle failures that may result in launch vehicle breakup in the flight hazard area.

(7) The analysis must account for the probability of occurrence of each type of launch vehicle failure. The analysis must account for vehicle failure probabilities that vary depending on the time of flight. The analysis must also account for the type of vehicle breakup, either by the flight termination system or by aerodynamic forces that may result in a different probability of existence for each debris class.

(8) The analysis must account for the debris classes produced by a launch vehicle failure or a commanded flight termination and the resulting three-sigma debris impact dispersions. The impact point and the three-sigma debris impact dispersions shall be determined for each debris class at each failure time.

(9) In addition to failure debris, the analysis must account for nominal jettisoned body debris impacts and the corresponding three-sigma debris impact dispersions. The analysis must account for the planned number of debris fragments produced by normal separation events during flight with a probability of occurrence equal to the launch vehicle success rate at the time of each separation event.

(e) *Blast overpressure hazard area.* A launch operator shall define a blast overpressure hazard area as a circle extending from an explosive debris impact point with a radius equal to the 3.0-psi overpressure distance produced by the equivalent TNT weight of the explosive debris. The analysis must account for the maximum possible total solid and liquid propellant load capability of the launch vehicle and any payload at debris impact. A launch operator shall compute the overpressure radius using the TNT equivalency equation used for quantity distance computations and in accordance with the methodology provided in appendix A of this part. A launch operator shall add the overpressure radius to each explosive debris impact to define the overall blast overpressure hazard area.

(f) *Other hazards.* A launch operator shall identify any additional hazards, such as radioactive material, that may exist on the launch vehicle or payload that in the form of debris may be an additional hazard to the public. For each such hazard, the launch operator shall identify a hazard area that encompasses any debris impact point and its dispersion and includes an additional hazard radius that accounts for the additional hazard. A launch operator shall account for any hazards due to toxic release and distant focus overpressure blast in accordance with § 417.229 and § 417.231, respectively.

(g) *Flight hazard area ship-hit contours.* Where applicable, a launch operator shall perform an analysis to define ship hazard areas, referred to as ship-hit contours, to ensure that the probability of hitting a ship satisfies the collective probability threshold of 1×10^{-5} required by § 417.107(b). The flight hazard area shall encompass all ship-hit contours. A launch operator shall determine ship-hit contours in accordance with the following:

(1) A launch operator shall determine ship-hit contours for one to 10 ships in increments of one ship. For each given number of ships, the associated ship-hit contour must bound an area around the nominal instantaneous impact point trace where, if the given number of ships were located on the contour, the collective probability of impacting any ship would be less than or equal to the 1×10^{-5} ship-hit criteria. A launch operator shall determine each ship hit contour in accordance with the following:

(i) The determination of a ship-hit contour for a given number ships must be an iterative process of evaluating ship location points that have increasing downrange and crossrange distances from the launch point. The total surface area for the given number of ships shall be centered at each ship location point evaluated. A launch operator shall use the methodology for computing ship-hit probability and generating the ship-hit contours contained in A417.5 of appendix A of this part unless the launch operator demonstrates, clearly and convincingly, through the licensing process that another methodology achieves an equivalent level of safety.

(ii) For each downrange distance along the nominal instantaneous impact point trace, ship location points with progressively increasing crossrange distance shall be evaluated until a ship location point is reached that corresponds to a ship-hit probability that is less than or equal to 1×10^{-5}.

(iii) As the ship location points being evaluated progress downrange, each ship-hit contour will come to a close on the nominal instantaneous impact point trace at a point where the ship-hit criteria can no longer be exceeded for any point further downrange for the number of ships for which the contour is being generated.

(2) The analysis must account for all classes of debris and the number of debris fragments within a debris class as determined in accordance with § 417.209(c). A ship-hit contour need not account for debris with a ballistic coefficient of less than three.

(3) A launch operator shall account for debris classes in accordance with § 417.209(c) for both nominal staging events and potential vehicle failures that may result in vehicle breakup in the flight hazard area. Vehicle failures shall be analyzed as a function of probability of occurrence. As applicable, debris classes shall be produced for both flight termination and for aerodynamic breakup and modeled as a function of probability of occurrence.

(4) Each debris class shall describe the mean impact point and the three-sigma debris impact dispersions. The analysis must account for launch vehicle failure probabilities as a function of flight time. The analysis must also account for the type of vehicle breakup, either by the flight termination system or by aerodynamic forces that may result in a different probability of occurrence for each debris class.

(5) A launch operator shall determine the need to survey the ship-hit contours during the launch vehicle countdown procedures in accordance with A417.5(c) of appendix A. When surveillance is required, a launch operator shall survey for ships in accordance with § 417.121(f). A launch operator shall implement launch safety rules in accordance with § 417.113 where flight shall not be initiated if, at the time of flight, the number of ships within any ship-hit contour is greater than or equal to the number of ships for which the contour was generated.

(6) A launch operator shall use the ship-hit contour for 10 ships as a ship hazard area for providing notice to mariners in accordance with § 417.121(e).

(h) *Flight hazard area aircraft-hit contour.* A launch operator shall determine an aircraft-hit contour to ensure that the probability of hitting an aircraft satisfies the individual probability threshold of 1×10^{-8} required by § 417.107(b) for the flight hazard area around the launch point. A launch operator shall ensure that the aircraft-hit contour is contained within the flight hazard area and is enforced for altitudes extending from zero to 60,000 feet. A launch operator shall determine an aircraft-hit contour in accordance with the following:

(1) A launch operator shall determine an aircraft-hit contour that bounds an area around the nominal instantaneous impact point trace where, if an aircraft were located on the contour, the individual probability of impacting the aircraft would be less than or equal to the 1×10^{-8} aircraft-hit criteria. A launch operator shall determine an aircraft-hit contour following the same method used to determine ship-hit contours required by appendix A of this part.

(2) A launch operator shall use the dimension of the largest aircraft operated in the vicinity of the launch or, if unknown, the dimensions of a Boeing 747 aircraft.

(3) The analysis must account for all classes of debris and the number of debris fragments within a debris class as determined in accordance with § 417.209(c). An aircraft-hit contour need not account for debris with kinetic energy of less than 11 foot pounds.

(4) The analysis must account for debris classes in accordance with § 417.209(c) for both nominal staging events and potential vehicle failures that may result in vehicle breakup in the flight hazard area. Vehicle failures shall be analyzed as a function of probability of occurrence. Debris classes shall be produced for both flight termination and for aerodynamic breakup and modeled as a function of probability of occurrence.

(5) Each debris class must describe the mean impact point and the three-sigma debris impact dispersions. The analysis must account for launch vehicle failure probabilities as a function of flight time. The analysis must also account for the type of vehicle breakup, either by the flight termination system or by aerodynamic forces that may result in a different probability of occurrence for each debris class.

(i) *Flight corridor ship hazard areas.* Within a flight corridor outside the flight hazard area, a launch operator shall establish a ship hazard area for each planned debris impact for the issuance of notice to mariners in accordance with § 417.121(e). The ship hazard area must consist of an area centered on the planned impact point and defined by the larger of the three-sigma impact dispersion ellipse or an ellipse with the same semi-major and semi-minor axis ratio as the impact dispersion, where, if a ship were located on the boundary of the ellipse, the probability of hitting the ship would be less than or equal to 1×10^{-5}. A launch operator shall determine ship hazard areas for planned debris impacts using the methodologies contained in paragraphs C417.5(h) and C417.5(i) of appendix C, which apply to both orbital and suborbital launch unless the launch operator demonstrates, clearly and convincingly, through the licensing process that another methodology achieves an equivalent level of safety. A launch operator shall determine if surveillance of a ship hazard area is required in accordance with paragraph C417.5(g) of appendix C of this part.

(j) *Flight corridor aircraft hazard areas.* Within a flight corridor outside the flight hazard area, a launch operator shall establish aircraft hazard areas for each planned debris impact for the issuance of notices to airmen in accordance with § 417.121(e). Each aircraft hazard area must encompass an air space region, from an altitude of 60,000 feet to impact on the Earth's surface, that contains the larger of the three-sigma drag impact dispersion or an ellipse with the same semi-major and semi-minor axis ratio as the impact dispersion, where, if an aircraft were located on the boundary of the ellipse the probability of hitting the aircraft would be less than or equal to 1×10^{-8}. A launch operator shall determine aircraft hazard areas for planned debris impacts for both orbital and suborbital launch using the methodology contained in paragraph C417.5(f) of appendix C of this part.

(k) *Flight hazard area analysis products.* The products of a launch operator's flight hazard area analysis to be submitted in accordance with § 417.203(c) must include, but need not be limited to, the following:

(1) A chart that depicts the flight hazard area, including its size and location.

(2) A chart that depicts each hazard area required by this section.

(3) A description of each hazard for which analysis was performed; the methodology used to compute each hazard area; and the debris classes for aerodynamic breakup of the launch vehicle and for flight termination. For each debris class, the launch operator shall define the number of debris fragments, the variation in ballistic coefficient, and the standard deviation of the debris dispersion.

(4) Charts that depict the ship-hit contours, the individual casualty contour, and the aircraft-hit contour.

(5) Charts and a description of the flight corridor, including any regions of land overflight.

(6) A description of the aircraft hazard area for each planned debris impact inside the flight corridor, the information to be published in a Notice to Airmen, and all information required as part of any agreement with the FAA ATC office having jurisdiction over the airspace through which flight will take place.

(7) A description of any ship hazard area for each planned debris impact inside the flight corridor and all information required in a Notice to Mariners.

(8) A description of the methodology used for determining each hazard area.

(9) A description of the hazard area operational controls and procedures to be implemented for flight.

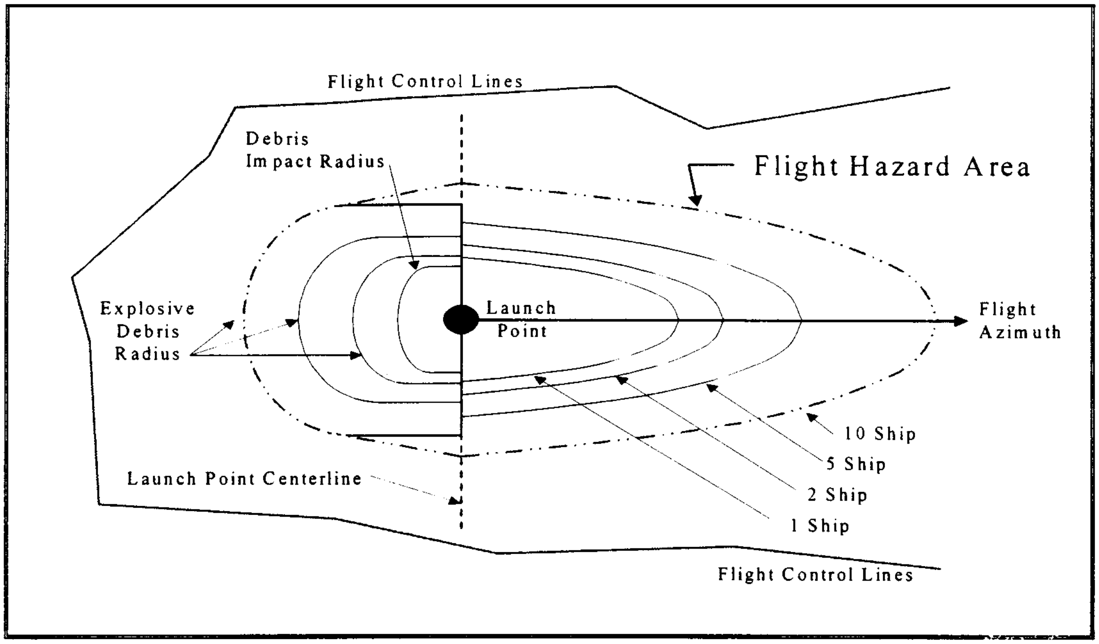


Figure 417.225- 1, Illustration of a Flight Hazard Area for a Coastal Launch Site

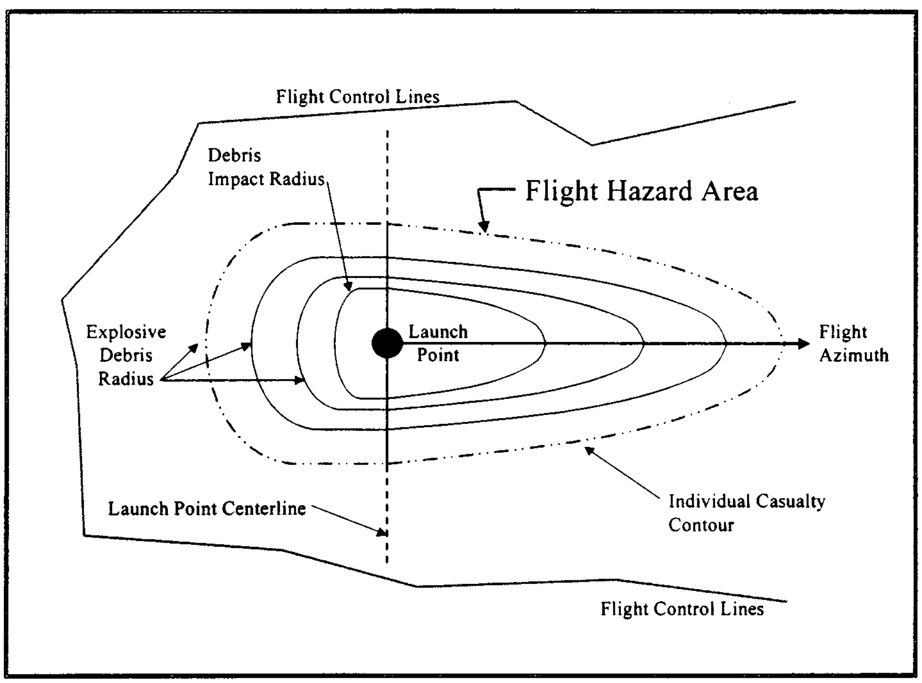


Figure 417.225- 2, Illustration of a Flight Hazard Area for a Land Locked Launch Site

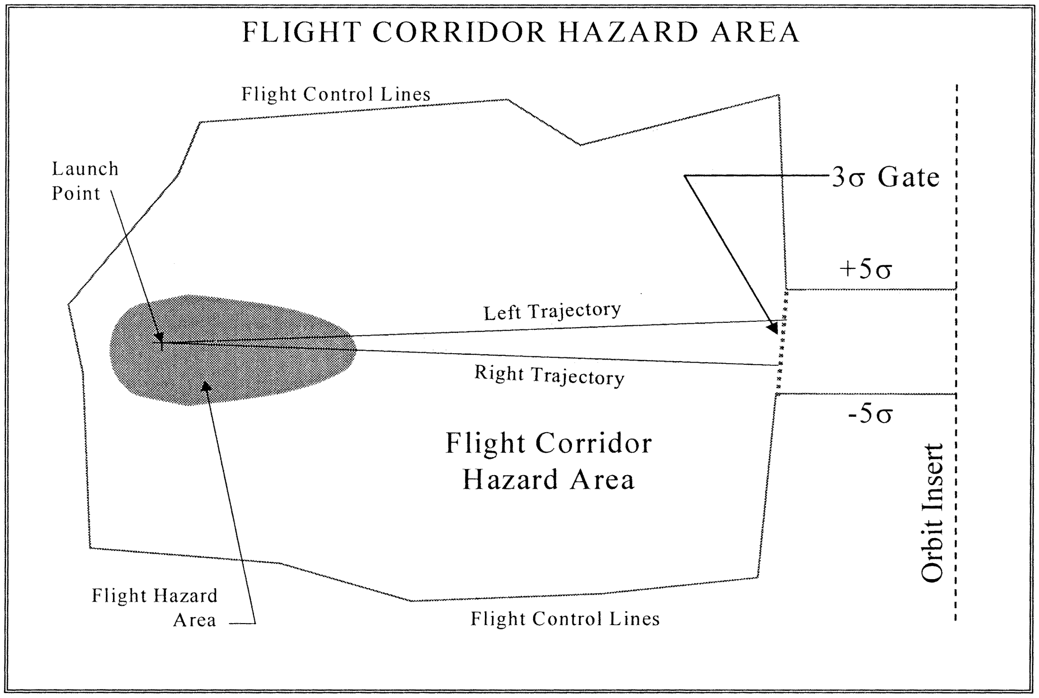


Figure 417.225- 3, Illustration of a Flight Corridor Hazard Area

§ 417.227 Debris risk analysis.

(a) *General.* A launch operator shall perform a debris risk analysis to determine the expected average number of casualties (E_C) to the collective members of the public exposed to inert and explosive debris hazards from the proposed flight of a launch vehicle. The results of the debris risk analysis must be included in the launch operator's demonstration of compliance with the public risk criteria required by § 417.107 (b). A launch operator's debris risk analysis must include an evaluation of risk to populations on land, including regions of launch vehicle flight following passage through any gate in a flight safety limit boundary established in accordance with § 417.219. The debris risk analysis requirements of this section apply to all launches.

(b) *Debris risk analysis constraints.* A launch operator's debris risk analysis must be performed in accordance with the following:

(1) A launch operator shall use the methodologies and equations provided in appendix B of this part when performing a debris risk analysis unless, through the licensing process, the launch operator provides a clear and convincing demonstration that an alternate method provides an equivalent level of safety.

(2) A launch operator's debris risk analysis must account for the following populations:

(i) The overflight of populations located outside a flight hazard area and inside any flight control lines established in accordance with § 417.211.

(ii) All populations located within five-sigma left and right crossrange of a nominal trajectory instantaneous impact point ground trace and within five-sigma of each planned nominal debris impact.

(iii) Any planned overflight of the public within any gate overflight areas established in accordance with § 417.219.

(iv) Any populations outside the flight control lines identified in accordance with paragraph (b)(10) of this section.

(3) [Reserved]

(4) A debris risk analysis must account for both inert and explosive debris hazards produced from any impacting debris caused by planned launch vehicle events and breakup of a launch vehicle due to activation of a flight termination system or spontaneous breakup due to a launch vehicle failure during launch vehicle flight. The analysis must account for the debris classes determined by the debris analysis required by § 417.209. A debris risk analysis need not account for debris with a ballistic coefficient of less than three. The analysis must account for all debris hazards as a function of flight time.

(5) A debris risk analysis must account for debris impact points and dispersion for each class of debris in accordance with the following:

(i) A debris risk analysis must account for drag corrected impact points and dispersions for each class of impacting debris resulting from planned flight events and from launch vehicle failure as a function of trajectory time.

(ii) The dispersion for each debris class must account for the position and velocity state vector dispersions at breakup, the delta velocities incurred from breakup produced by either aerodynamic forces or explosive forces from flight termination system activation, the variance produced by winds, variance in ballistic coefficient for each debris class, and any other dispersion variances.

(iii) A launch operator's debris risk analysis may account for the survivability of debris fragments that are subject to reentry aerodynamic forces or heating. A debris class may be eliminated for the debris risk analysis if the launch operator performs a survivability analysis and demonstrates that the debris will not survive to impact.

(6) A debris risk analysis must account for launch vehicle failure probability. For the purposes of a debris risk analysis, a launch operator shall determine the launch vehicle failure probability from theoretical or actual launch vehicle flight data in accordance with the following:

(i) For a launch vehicle with fewer than 15 flights, a launch operator shall use an overall launch vehicle failure probability of 0.31.

(ii) For a launch vehicle with at least 15 flights, but fewer than 30 flights, a launch operator shall use an overall launch vehicle failure probability of 0.10 or the empirical failure probability, whichever is greater.

(iii) For a launch vehicle with 30 or more flights, a launch operator shall use the empirical failure probability determined from the actual flight history.

(iv) For a launch vehicle with a previously established failure probability that undergoes a modification to a stage, that could affect the reliability of that stage, the launch operator shall apply the previously established failure probability to all unmodified stages and the failure probability requirements of paragraphs (b)(6)(i) through (iii) of this section to the modified stage.

(7) A debris risk analysis must account for the dwell time of the instantaneous impact point ground trace over each populated or protected area being evaluated.

(8) A debris risk analysis must account for the three-sigma instantaneous impact point trajectory variations in left-crossrange, right-crossrange, uprange, and downrange as a function of trajectory time, due to launch vehicle performance variations as determined by the launch operator's trajectory analysis performed in accordance with § 417.205.

(9) A debris risk analysis must account for the effective casualty area as a function of launch vehicle flight time for all impacting debris generated from a catastrophic launch vehicle malfunction event or a planned impact event. A launch operator shall include both payload and vehicle systems and subsystems debris in the effective casualty area. The effective casualty area must account for bounce, skip, and splatter of inert debris, a 3.0-psi blast overpressure radius and projected debris effects for all potentially explosive debris, and a hazard radius for any other non-inert debris. The effective casualty area must account for all debris fragments determined as part of a launch operator's debris analysis in accordance with § 417.209.

(10) A debris risk analysis must account for current population density data obtained from a current population database for the region being evaluated or by estimating the current population using traditional population growth rate equations applied to the most current historical data available. A debris risk analysis must account for the population density of population centers whose grid dimensions on Earth's surface do not exceed 1° latitude by 1° longitude. A debris risk analysis must account for any city with population equal to or greater than 25,000 as an individual population center.

(11) For a launch vehicle that uses a flight termination system, a debris risk analysis must account for the collective risk to any populations outside the flight control lines in the area surrounding the launch site during flight, including people who will be at any public launch viewing area during flight. A launch operator shall use the screening methodology provided in B417.7 of appendix B of this part to identify any populations for which the launch operator shall perform debris risk analysis. For such populations, in addition to the constraints listed in paragraphs (b)(1) through (b)(10) of this section, a launch operator's debris risk analysis must account for the following:

(i) The probability of a launch vehicle failure that would result in debris impact in the areas outside the flight control lines.

(ii) The failure rate of the launch operator's flight safety system. A launch operator may use a flight safety system failure rate of 0.002 if the flight safety system is in compliance with the flight safety system requirements of subpart D of this part. For an alternate flight safety system approved in accordance with § 417.107(a)(3), the launch operator shall demonstrate the validity of the probability of failure on a case-by-case basis through the licensing process.

(iii) Current population density data for the areas being evaluated that are outside the flight control lines. This data shall be determined based on the most current census data and projections for the day and time of flight.

(c) *Debris risk analysis products.* The products of a launch operator's debris risk analysis to be submitted in accordance with § 417.203(c) must include the following:

(1) A debris risk analysis report that provides the analysis input data, probabilistic risk determination methods, sample computations, and text or graphical charts that characterize the public risk to geographical areas for each launch.

(2) Geographic data showing the launch vehicle nominal, five-sigma left-crossrange and five-sigma right-crossrange instantaneous impact point ground traces; all exclusion zones relative to the instantaneous impact point ground traces; and populated areas included in the debris risk analysis.

(3) A discussion of each launch vehicle failure scenario addressed in the analysis and the probability of occurrence, which may vary with flight time, for each failure scenario. This information must include a failure scenario where a launch vehicle flies within normal limits until some malfunction causes spontaneous breakup or results in a commanded flight termination. For a launch that employs a flight safety system, this information must also describe the most likely launch vehicle failure scenario and probability of occurrence for a random attitude failure as described in B417.7(e) of appendix B of this part.

(4) A population model applicable to the launch overflight regions that contains the following: area identification, location of the center of each population cell by geodetic latitude and longitude, total area, and number of persons in each population cell.

(5) A description of the launch vehicle, including general information concerning the nature and purpose of the launch and an overview of the launch vehicle, including a scaled diagram of the general arrangement and dimensions of the vehicle. A launch operator's debris risk analysis products may reference other documentation submitted to the FAA containing this information. The launch operator shall identify any changes in the launch vehicle description from that submitted during the licensing process according to § 415.109(e). The description must include:

(i) Weights and dimensions of each stage.

(ii) Weights and dimensions of any booster motors attached.

(iii) The types of fuel used in each stage and booster.

(iv) Weights and dimensions of all interstage adapters and skirts.

(v) Payload dimensions, materials, construction, any payload fuel; payload fairing construction, materials, and dimensions; and any non-inert components or materials that add to the effective casualty area of the debris, such as radioactive or toxic materials or high-pressure vessels.

(6) A typical sequence of events showing times of ignition, cutoff, burnout, and jettison of each stage, firing of any ullage rockets, and starting and ending times of coast periods and control modes.

(7) A launch operator shall submit the following information for each launch vehicle motor:

(i) Propellant type and ingredients.

(ii) Values of thrust.

(iii) Propellant weight and total motor weight versus time.

(iv) A description of each nozzle and steering mechanism.

(v) For solid rocket motors, internal pressure and average propellant thickness, or borehole radius, as a function of time.

(vi) Maximum impact point deviations as a function of failure time during destruct system delays. Burn rate as a function of ambient pressure.

(vii) A discussion of whether a commanded destruct could ignite a non-thrusting motor, and if so, under what conditions.

(8) A launch vehicle's launch and failure history, including a summary of past vehicle performance. For a new vehicle with little or no flight history, a launch operator shall provide summaries of similar vehicles. The data shall include the launches that have occurred; launch date, location, and direction; the number that performed normally; behavior and impact location of each abnormal experience; the time, altitude, and nature of each malfunction; and descriptions of corrective actions taken, including changes in vehicle design, flight termination, and guidance and control hardware and software.

(9) A discussion of the analysis performed for any populations outside the flight control lines in accordance with paragraph (b)(11) of this section.

(10) The value of E_C for each populated area evaluated.

§ 417.229 Toxic release hazard analysis.

For each launch, a launch operator shall perform a toxic release hazard analysis to determine any potential public hazards from any toxic release that will occur during the proposed flight of a launch vehicle or that would occur in the event of a flight mishap. A launch operator shall perform a toxic release hazard analysis using the methodologies contained in appendix I of this part. A launch operator shall use the results of the toxic release hazard analysis to establish for each launch, in accordance with § 417.113(b), flight commit criteria that protect the public from a casualty caused by any potential toxic release. The public includes any members of the public on land and any waterborne vessels and aircraft that are not operated in direct support of the launch.

§ 417.231 Distant focus overpressure explosion hazard analysis.

(a) *General.* A launch operator shall perform a distant focus overpressure blast effects hazard analysis to demonstrate that the potential public hazard resulting from impacting explosive debris will not cause windows to break with related injuries. A launch operator shall evaluate potential distant focus overpressure blast effects hazards in accordance with the requirements of this section, which require a launch operator to employ either the deterministic analysis requirements of paragraph (b) of this section or the probabilistic analysis requirements of paragraph (c) of this section.

(b) *Deterministic distant focus overpressure hazard analysis.* Except as permitted by paragraph (c) of this section, a launch operator shall perform a deterministic distant focus overpressure hazard analysis in accordance with the following:

(1) *Explosive yield factors.* A launch operator's distant focus overpressure hazard analysis must identify the explosive yield factor curves for each type or class of solid or liquid propellant used by the launch vehicle. For a launch vehicle that uses class 1.3 solid propellant HTPB or PBAN, a launch operator shall perform a distant focus overpressure hazard analysis using the explosive yield factor curves provided in figures 417.231–1 and 417.231–2 unless the launch operator demonstrates, clearly and convincingly, through the licensing process that other explosive yield factor curves apply to the launch and provide for an equivalent level of safety.

(2) *Determine the maximum credible explosive yield.* A launch operator shall determine the maximum credible explosive yield resulting from the impact of explosive debris resulting from potential launch vehicle failures and flight termination as determined by the debris analysis of § 417.209. The explosive yield shall be determined as a function of impact mass and velocity of impact on the Earth's surface. A launch operator shall determine the explosive yield, expressed as a TNT equivalent, using the explosive yield factor curves determined in accordance with paragraph (b)(1) of this section. This shall be accomplished for impacts of HTPB or PBAN in accordance with the following:

(i) *Impacts of intact motors or motor segments on soil.* For an intact impact of a HTPB or PBAN solid propellant motor or motor segment, a launch operator shall use the explosive yield factor curves in figure 417.231–1 to determine the explosive yield, expressed as a TNT equivalent. For impact speeds of less than 100 feet per second, the launch operator shall assume the results to be zero. For impact speeds exceeding 800 feet per second, the launch operator shall use the results produced by a speed of 800 feet per second. For a motor or motor segment with a diameter smaller than 40 inches, the launch operator shall use the yield factor for a diameter of 40 inches. For a motor or motor segment with a diameter larger than 146 inches, the launch operator shall use the yield factor for a diameter of 146 inches. For a motor or motor segment with a diameter between 40 and 146 inches, not otherwise specifically represented in Figure 417.231–1, the launch operator shall obtain the yield factor by linear interpolation between the curves represented in Figure 417.231–1.

(ii) *Impacts of propellant on soil.* For an impact of a HTPB or PBAN solid propellant chunk, a launch operator shall use the explosive yield factor curves in figure 417.231–2 to determine the explosive yield, expressed as a TNT equivalent. For impact speeds less than 100 feet per second, the launch operator shall assume the results to be zero. For impact speeds exceeding 800 feet per second, the launch operator shall use the results produced by a speed of 800 feet per second. For a propellant chunk smaller that 300 pounds, the launch operator shall use the yield factor of a 300-pound propellant chunk. For propellant chunk larger than 60,000 pounds, the launch operator shall use the yield factor of a 60,000-pound propellant chunk. For a propellant chunk between 300 and 60,000 pounds, not otherwise specifically represented in figure 417.231–2, the launch operator shall obtain the yield factor by linear interpolation between the curves represented in figure 417.231–2.

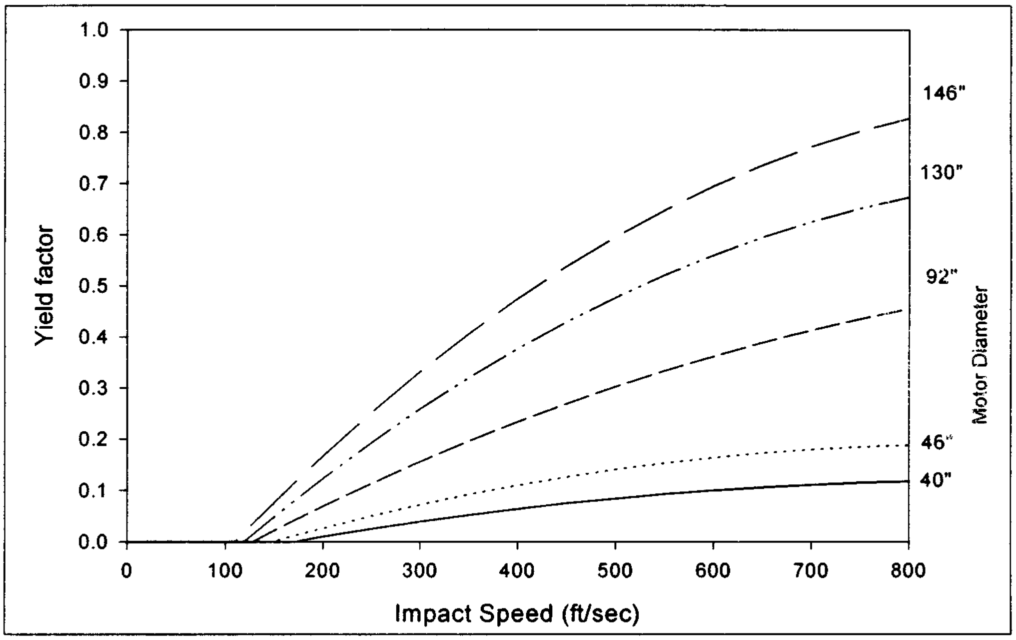


Figure 417.231-1. Motor Side-On Impact on Soil

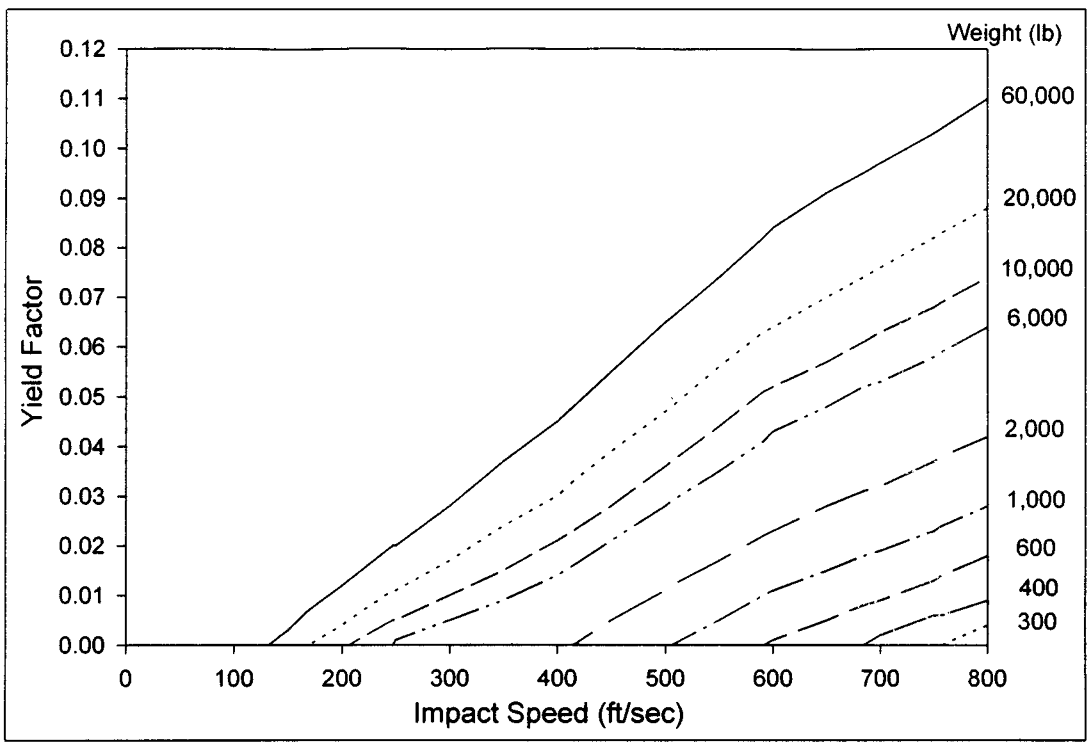


Figure 417.231-2. Chunk Impact on Soil

(3) *Characterize the population exposed to the hazard.* A launch operator shall determine if any population centers are vulnerable to a distant focus overpressure hazard using the methodology provided by section 6.3.2.4 of the American National Standard Institute's ANSI S2.20–1983, "Estimating Air Blast Characteristics for Single Point Explosions in Air with a Guide to Evaluation of Atmospheric Propagation and Effects." The launch operator shall perform these calculations in accordance with the following:

(i) For the purposes of this analysis, a population center is defined as any area outside the launch site and not under the launch operator's control that contains an exposed site. An exposed site is any structure that may be occupied by human beings, and that has at least one window, excluding automobiles, airplanes, and waterborne vessels. A ''single residence,'' as used in section 6.3.2.4 of ANSI S2.20–1983 shall be treated as an exposed site. A launch operator shall use the most recent census information on each population center evaluated.

(ii) A launch operator shall determine the distance from the maximum credible impact explosion site to each population center potentially exposed. Unless the launch operator demonstrates, through the licensing process, that the potential explosion site is positively limited to a defined region, the distance between the potential explosion site and a population center must be the minimum distance between any point within the region contained by the flight control lines and the nearest exposed site within the population center.

(iii) A launch operator shall assume that weather conditions are optimized for a distant focus overpressure hazard and use an atmospheric blast focus factor (F) of 5 as defined by ANSI S2.20–1983.

(iv) For the purposes of this analysis, a population center shall be deemed vulnerable to the distant focus overpressure hazard if the ''no damage yield limit,'' calculated for the population center using the methodology in section 6.3.2.4 of ANSI S2.20–1983, is less than the maximum credible explosive yield. If there are no exposed sites that have a ''no damage yield limit'' that is less than the maximum credible explosive yield, the launch is exempt from any further requirements in this section.

(4) *Estimate the quantity of broken windows.* A launch operator shall use a focus factor of 5 and the methods provided by ANSI S2.20–1983 to estimate the number of potential broken windows within each population center determined to be vulnerable to the distant focus overpressure hazard in accordance with paragraph (b)(3) of this section.

(5) *Determine and implement measures necessary to prevent distant focus overpressure from breaking windows.* For each population center deemed vulnerable to a distant focus overpressure hazard, a launch operator shall determine and implement mitigation measures to protect the public from serious injury from broken windows. This may be accomplished by using one or more of the following measures:

(i) Apply 4-millimeter thick anti-shatter film to windows at all exposed sites.

(ii) Evacuate the exposed public to a location that is not vulnerable to the distant focus overpressure hazard at least two hours prior to the planned flight time.

(iii) If less than 20 windows are predicted to break, as determined in accordance with paragraph (b)(4) of this section, advise the public of the potential for glass breakage.

(iv) Measure the speed of sound as a function of altitude for the time of flight and conduct launches only when an inversion in the sonic velocity profile does not exist within ±30 degrees azimuth toward any population center vulnerable to a distant focus overpressure hazard, accounting for uncertainty in the meteorological conditions present during flight. For a launch operator to use this approach as a mitigation measure, a launch operator shall demonstrate that no window breakage is predicted in any population center due to a maximum credible yield explosion using the analysis methods in section 6.3.2.4.1 of ANSI S2.20–1983. A launch operator may also refine its analysis by performing acoustic ray path calculations to determine the actual focusing region and the focusing factor (F) that apply to a launch as described in section 5.1.3 of ANSI S2.20–1983 using the referenced computer methods.

(c) *Probabilistic distance focusing overpressure analysis.* When mitigation measures cannot be used a launch operator may apply statistical risk management to control the distant focus overpressure hazard. When proposing to follow this approach, a launch operator shall demonstrate through a distant focus overpressure risk analysis that the launch will be conducted in accordance with the public risk criteria contained in § 417.107(b). The FAA will evaluate any distant focus overpressure risk analysis on a case-by-case basis.

(d) *Distant focus over pressure blast effect products.* The products of a launch operator's distant focus overpressure analysis to be submitted in accordance with § 417.203(c) must include the following:

(1) A launch operator shall submit a description of the methodology used to produce the distant focus overpressure analysis results, a tabular description of the analysis input data, and a description of any distant focus overpressure mitigation measures implemented. If the launch operator elects to measure the speed of sound as a function of altitude and conduct launches only when a focusing condition toward populated areas does not exist, the launch operator shall submit a description of the method for evaluating weather parameters to determine the existence of conditions that will permit the launch operator to comply with the distant focus overpressure requirements of this section.

(2) A launch operator shall submit one example set of any distant focus overpressure risk analysis computations.

(3) A launch operator shall submit the values for the maximum credible explosive yield as a function of time of flight.

(4) A launch operator shall identify the distance between the potential explosion site and any population center vulnerable to the distant focus overpressure hazard. For each population center, the launch operator shall identify the exposed populations by location and number of people.

(5) A launch operator shall describe any mitigation measures established to protect the public from distant focus overpressure hazards and any flight commit criteria established to ensure the mitigation measures are enforced.

§ 417.233 Conjunction on launch assessment.

(a) *General.* A licensee shall obtain a conjunction on launch assessment performed by United States Space Command. A licensee shall implement any launch waits in a planned launch window identified by the conjunction on launch assessment during which flight must not be initiated, in order to maintain a 200-kilometer separation from any inhabitable orbiting object in accordance with § 417.107. A licensee may request a conjunction on launch assessment be performed for other orbital objects to meet mission needs or to accommodate other satellite owners or operators.

(b) *Conjunction on launch assessment analysis constraints.* A launch operator shall satisfy the following when obtaining and implementing the results of a conjunction on launch assessment:

(1) A licensee shall provide United States Space Command with the launch window and trajectory data needed to perform a conjunction on launch assessment for a launch as required by paragraph (c) of this section, at least 15 days before the first attempt at flight. The FAA will identify a licensee to United States Space Command as part of issuing a license and provide a licensee with current United States Space Command contact information.

(2) A licensee shall obtain a conjunction on launch assessment performed by United States Space

Command 6 hours before the beginning of a launch window.

(3) A conjunction on launch assessment is valid for 12 hours from the time that the state vectors of the inhabitable orbiting objects were determined. If an updated conjunction on launch assessment is needed due to a launch delay, a licensee shall submit the request at least 12 hours prior to the next launch attempt.

(4) For every 90 minutes, or portion of 90 minutes, that pass between the time United States Space Command last determined the state vectors of the orbiting objects, a licensee shall expand each launch window wait by subtracting 15 seconds from the start of the launch window wait and adding 15 seconds to the end of the launch window wait. A launch operator shall incorporate the resulting launch window waits into its flight commit criteria established in accordance with § 417.113.

(c) *Information required.* A launch operator shall prepare a conjunction on launch assessment worksheet for each launch using a standardized format that contains the input data required by this paragraph. An example conjunction on launch assessment worksheet is provided in figure 417.233–1. A launch operator licensee shall submit the input data to United States Space Command for the purposes of completing a conjunction on launch assessment. A launch operator license applicant shall submit the input data to the FAA as part of the license application process according to § 415.115 of this chapter.

(1) *Launch information.* A launch operator shall submit the following launch information:

(i) *Mission name.* A mnemonic given to the launch vehicle/payload combination identifying the launch mission from all others.

(ii) *Segment number.* A segment is defined as a launch vehicle stage or payload after the thrusting portion of its flight has ended. This includes the jettison or deployment of any stage or payload. A separate worksheet is required for each segment. For each segment, a launch operator shall determine the ''vector at injection'' as defined by paragraph (c)(5) of this section. Each segment number shall be provided as a sequence number relative to the total number of segments for a launch, such as ''1 of 5.''

(iii) *Launch window.* The launch window opening and closing times in Greenwich Mean Time (referred to as ZULU time on the sample form) and the Julian dates for each scheduled launch attempt.

(2) *Point of contact.* The person or office within a licensee's organization that collects, analyzes, and distributes conjunction on launch assessment results.

(3) *Conjunction on launch assessment analysis results transmission medium.* A launch operator shall identify the transmission medium, such as voice, FAX, or e-mail, for receiving results from United States Space Command.

(4) *Requestor launch operator needs.* A launch operator shall indicate which of the following analysis output formats it requires for establishing flight commit criteria for a launch:

(i) *Waits.* The times within the overall launch window during which flight must not be initiated.

(ii) *Windows.* The times within an overall launch window during which flight may be initiated.

(5) *Vector at injection.* A launch operator shall identify the vector at injection for each segment. The term ''vector at injection'' is used to identify the position and velocity vectors after the thrust for a segment has ended. The term was originally used to refer to a segment upon orbital injection, but in practice is used to describe any segment of a launch, whether orbital or suborbital.

(i) *Epoch.* The epoch time, in Greenwich Mean Time (GMT), of the expected launch vehicle liftoff time.

(ii) *Position and velocity.* The position coordinates in the EFG coordinate system in kilometers and the velocity coordinates in the coordinate system in kilometers per second, of each launch vehicle stage or payload after any burnout, jettison, or deployment.

(6) *Time of powered flight.* The elapsed time in seconds, from liftoff, for the launch vehicle to arrive at the vector at injection. For each stage or component jettisoned, the time of powered flight shall be measured from liftoff.

(7) *Time span for launch window file (LWF).* A launch operator shall provide the following information regarding its launch window:

(i) *Launch window.* The launch window measured in minutes from the initial proposed liftoff time.

(ii) *Time of powered flight.* The time given in paragraph (c)(6) of this section measured in minutes rounded up to the nearest integer minute.

(iii) *Screen duration.* The time duration, after all thrusting periods of flight have ended, that a conjunction on launch assessment must screen for potential conjunctions with orbital objects. Screen duration is measured in minutes and must be greater than or equal to 100 minutes for an orbital launch.

(iv) *Extra pad.* An additional period of time for conjunction on launch assessment screening to ensure the entire first orbit is evaluated. This time shall be 10 minutes unless otherwise specified by United States Space Command.

(v) *Total.* The summation total of the time spans provided in paragraphs (c)(7)(i) through (c)(7)(iv) of this section expressed in minutes.

(8) *Screening.* A launch operator shall select spherical or ellipsoidal screening as defined in this paragraph for determining any conjunction. The default shall be the spherical screening method using an avoidance radius of 200 kilometers for habitable orbiting objects. If the launch operator requests screening for any uninhabitable objects, the default shall be the spherical screening method using a miss-distance of 25 kilometers.

(i) *Spherical screening.* Spherical screening utilizes an impact exclusion sphere centered on each orbiting object's center-of-mass to determine any conjunction. A launch operator shall specify the avoidance radius for habitable objects and for any uninhabitable objects if the launch operator elects to perform the analysis for uninhabitable objects.

(ii) *Ellipsoidal screening.* Ellipsoidal screening utilizes an impact exclusion ellipsoid of revolution centered on the orbiting object's center-of-mass to determine any conjunction. A launch operator shall provide input in the UVW coordinate system in kilometers. The launch operator shall provide delta-U measured in the radial-track direction, delta-V measured in the in-track direction, and delta-W measured in the cross-track direction.

(9) *Orbiting objects to evaluate.* A launch operator shall identify the orbiting objects to be included in the analysis.

(10) *Deliverable schedule/need dates.* A launch operator shall identify the times before flight, ''L-times,'' that the conjunction on launch assessment is needed.

(d) *Conjunction on launch assessment products.* A launch operator must submit its conjunction on launch assessment products according to § 417.203(c) and must include the input data required by paragraph (c) of this section. A launch operator licensee shall incorporate the result of the conjunction on launch assessment into its flight commit criteria established in accordance with § 417.113.

Figure 417.233-1, Example Conjunction On Launch Assessment Worksheet.

Pre-Launch Conjunction On Launch Assessment Worksheet			
Launch Information		**Point of Contact**	
Name:		Voice DSN:	
Segment Number:	of	Voice Comm:	
Launch Window		FAX DSN:	
Julian Date:		FAX Comm:	
Open Time:		CFL:	
Close Time:		E-mail	

Requestor Needs (circle choices)		Send Results via (circle choices)		
Waits	Windows	E-mail	FAX	Voice

Vector at Injection		Time of Powered Flight (ToPF)	
E (km):		seconds	
F (km):		Time Span For LWF (minutes)	
G (km):		Launch Window:	
ED (km/s):		ToPF:	
FD (km/s):		Screen Duration:	
GD (km/s):		Extra Pad:	10
Epoch (s):		Total:	

Spherical Screening (Y/N) Avoidance Radius (km)		Ellipsoidal Screening (Y/N) Delta (km)	
Uninhabitable Objects:		Radial-Track (ΔU):	
		In-Track (ΔV):	
Inhabitable Objects:		Cross-Track (ΔW):	

Orbiting Objects to Evaluate (circle choice)		
Inhabitable Only	All Objects	Inhabitable and Other: (specify)

Runs Due			
L-	L-	L-	L-
L-	L-	L-	L-
L-	L-	L-	L-

§ 417.235 Analysis for launch of an unguided suborbital rocket flown with a wind weighting safety system.

(a) *General.* The requirements of this section apply to the launch of an unguided suborbital rocket. A launch operator shall perform a flight safety analysis to determine the launch parameters and conditions under which an unguided suborbital rocket may be flown using a wind weighting safety system. The results of this analysis must demonstrate that any adverse effects resulting from flight will be contained within controlled operational areas and any flight hardware or payload impacts will occur within planned impact areas. The flight safety analysis must demonstrate compliance with the safety criteria and operational requirements of § 417.125 and must include the other analyses required by this section. The flight safety analysis must be conducted in accordance with appendixes B and C of this part.

(b) *Trajectory analysis.* A launch operator shall perform a trajectory analysis to determine an unguided suborbital rocket's nominal trajectory and three-sigma dispersed trajectories using the methods provided in appendix C of this part.

(c) *Hazard area analysis.* A launch operator shall perform a hazard area analysis to determine the land, sea, and air areas that must be monitored, controlled, or evacuated in order to protect the public from the adverse effects of planned unguided suborbital rocket flight events. A flight hazard area, impact hazard area, ship hazard area, and aircraft hazard area must be determined using the methods required by appendix C.

(d) *Debris risk analysis.* A launch operator shall perform a risk analysis to determine public risk for the expected average number of casualties (E_C) due to potential inert and explosive debris impacts resulting from planned or unplanned events occurring during the flight of an unguided suborbital rocket. The analysis shall account for the risk to all populations on land. A debris risk analysis must account for unguided suborbital rocket failure probability, flight dwell times over populated or other protected land areas, five-sigma lateral trajectory dispersion for a normal unguided suborbital rocket, effective casualty area of impacting debris, and population densities. The results of a launch operator's debris risk analysis must demonstrate that the launch will be conducted in accordance with the public risk criteria contained in § 417.107(b). A launch operator shall perform a debris risk analysis for the launch of an unguided suborbital rocket in accordance with § 417.227 and using the methodology provided in appendix B of this part.

(e) *Wind weighting analysis.* A launch operator shall perform a wind weighting analysis to determine launcher azimuth and elevation settings that correct for the windcocking and wind-drift effects on an unguided suborbital rocket due to wind forces. A launch operator shall perform a wind weighting analysis using the method provided in appendix C of this part and in accordance with the following:

(1) A wind weighting analysis must ensure that three-sigma of all wind weighted stage or other component impacts are contained within a three-sigma performance impact dispersion ellipse about the nominal no-wind impact point, assuming a normal bivariate Gaussian distribution. When determining stage (or impacting body) wind weighted impact points, a launch operator shall account for three standard deviation variations in ballistic performance error parameters, including wind measurement errors and errors in modeled response to wind forces.

(2) A launch operator shall perform an initial wind weighting analysis prior to flight to predict the effects of forecasted or statistical winds on impact point displacement during thrusting phases of flight as well as ballistic free-fall of each unguided suborbital rocket stage until impact.

(3) A launch operator shall perform a final wind weighting analysis as part of the launch-day countdown process with actual measured wind data.

(4) A launch operator shall use the results of a wind weighting analysis and the wind conditions for which the analysis is valid as the basis for flight commit criteria developed in accordance with § 417.113.

(f) *Conjunction on launch assessment.* A launch operator shall ensure that a conjunction on launch assessment is performed for the flight of an unguided suborbital rocket in accordance with § 417.233.

(g) *Products.* The products of a launch operator's flight safety analysis for launch of an unguided suborbital rocket to be submitted in accordance with § 417.203(c) must include the trajectory analysis products, hazard area analysis products, and wind weighting analysis products required by appendix C of this part. A launch operator shall also submit debris risk analysis products in accordance with § 417.227 and conjunction on launch assessment products in accordance with § 417.233.

§§ 417.236–417.300 [Reserved]

Subpart D—Flight Safety System

§ 417.301 General.

(a) A launch operator shall use a flight safety system that provides a means of preventing a launch vehicle and its hazards, including any payload hazards, from reaching the public in the event of a launch vehicle failure during flight. Requirements that define when a launch operator must employ a flight safety system are provided in § 417.107(a).

(b) A flight safety system must consist of a flight termination system, a command control system, and the support systems defined in this subpart, including all associated hardware and software unless the requirements of § 417.107(a)(3) apply. A flight safety system also includes the functions of any personnel who operate flight safety system hardware and software. A launch operator shall satisfy each requirement of this subpart, including all requirements contained in referenced appendices, by meeting the requirements or by using an alternate method approved by the FAA through the licensing process. If a flight safety system does not satisfy all the requirements of this subpart, the requirements of § 417.107(a)(3) apply. The FAA will approve an alternate method if a launch operator provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by this subpart. A launch operator shall obtain FAA approval of any proposed alternate method before its license application or application for license modification will be found sufficiently complete to initiate review pursuant to § 413.11 of this chapter.

(c) A launch operator's test program, required by § 417.115, must demonstrate the ability of a flight safety system to meet the design margins and reliability requirements of this subpart and the ability of the flight safety system to function without degradation in performance when subjected to non-operating and operating environments. The test program must satisfy the requirements of § 417.115 and include tests of the flight termination system and command control system as required by §§ 417.315, 417.317 and 417.325. The test program must include tests of the support systems required by § 417.327 and the equipment and instrumentation associated with the flight safety system, including real-time computers, display systems, consoles, telemetry, command control, tracking systems, and video systems. The cause of any test failure must be determined, corrective actions implemented, and additional testing performed to demonstrate that the test criteria are satisfied before flight.

(d) Any change to a licensee's flight safety system design or flight safety system test program that was not coordinated during the licensing process must be submitted to the FAA for approval as a license modification prior to flight.

(e) Prior to the flight of each launch vehicle, a licensee shall confirm to the FAA in writing that its flight safety system is as described in its license application, including all applicable application amendments and license modifications, and complies with all terms of the license and the requirements of this part.

(f) Upon review of a proposed launch, the FAA may identify and impose additional requirements needed to address unique issues presented by a flight safety system, including its design, operational environments, and testing.

§ 417.303 Launch vehicle flight termination system functional requirements.

(a) A launch operator shall use a flight termination system as part of a flight safety system. A flight termination system consists of all hardware and software onboard a launch vehicle needed to accomplish all flight termination functions in accordance with this section.

(b) Once initiated, a flight termination system must render each stage and any other propulsion system, including any propulsion system that is part of a payload that has the capability of reaching a populated or other protected area, non-propulsive, without significant lateral or longitudinal deviation in the impact point. A flight termination system must terminate flight in each thrusting stage and propulsion system. Any stage or propulsion system not thrusting at the time the flight termination system is initiated must be rendered incapable of becoming propulsive.

(c) The flight termination of one stage must not sever interconnecting flight termination system circuitry or ordnance of another stage until the flight termination of the other stage has been initiated.

(d) A flight termination system must destroy the pressure integrity of all solid propellant stages and strap-on motors. A flight termination system must terminate all thrust, or any residual thrust must cause a solid propellant stage or strap-on motor to tumble without significant lateral or longitudinal deviation in the impact point.

(e) A flight termination system must cause dispersion of any liquid propellant, whether by rupturing the propellant tank or other equivalent method, and initiate burning of any toxic liquid propellant.

(f) A flight termination system must not detonate any solid or liquid propellant.

(g) A flight termination system must include a command destruct system that is initiated by radio command and implemented in accordance with § 417.309. The FAA will approve another method, such as an autonomous flight termination system, if a launch operator provides a clear and convincing demonstration, through the licensing process, that its proposed method provides an equivalent level of safety.

(h) A flight termination system must provide for flight termination of any inadvertently or prematurely separated stage or strap-on motor capable of reaching a populated or other protected area before orbital insertion. Each stage or strap-on motor that does not possess its own complete command destruct system in accordance with § 417.309 must be equipped with an inadvertent separation destruct system that complies with the requirements of § 417.311.

§ 417.305 Flight termination system reliability.

(a) *Reliability design.* A flight termination system must have a reliability design of 0.999 at a confidence level of 95 percent. A launch operator shall conduct system reliability analyses according to § 417.329 to demonstrate whether a flight termination system has the required reliability design.

(b) *Single fault tolerant.* A flight termination system, including monitoring and checkout circuits, must not have a single failure point that would inhibit functioning of the system or produce an inadvertent output. Exceptions to this requirement apply to certain components that are identified in this subpart and that meet the design and test requirements in appendixes D and E of this part.

(c) *Redundancy.* A flight termination system must utilize redundant component strings in accordance with the following:

(1) Redundant components shall be structurally, electrically, and mechanically separated and mounted in different orientations on different axes.

(2) A flight termination system need not use redundant linear shaped charges, if, when employing a single linear shaped charge, the charge initiates at both ends, and the initiation source for one end is independent of the initiation source used for the other end.

(3) Passive components such as antennas and radio frequency couplers are not required to be physically redundant if they satisfy the requirements of appendix D of this part.

(d) *System independence.* A flight termination system must not share any power sources, cabling, or any other component with any other launch vehicle system. With the exception of any telemetry monitor signal and any engine shut-down output signal, a flight termination system must operate independently of all other vehicle systems.

(e) *Components and parts.* A licensee is responsible for the overall design of a flight termination system and shall ensure that all flight termination system components satisfy the requirements of appendix D of this part and all electronic piece parts used in a flight termination system component satisfy the requirements of appendix F of this part. A launch operator shall ensure that each flight termination system component and electronic piece part has written performance specifications that contain the particulars of how the component or piece part satisfies the requirements of appendixes D and F as related to the specific design of the flight termination system that contains the component or piece part.

(f) *Testability.* The design of a flight termination system and associated ground support and monitoring equipment shall provide for preflight testing performed in accordance with § 417.317.

(g) *Software and firmware.* A launch operator shall ensure that each software safety critical function associated with a flight termination system is identified, and that all associated computing systems, software, or firmware is designed, compiled, analyzed, tested, and implemented in accordance with § 417.123 and appendix H of this part. The requirements of appendix H also apply to any computing system, software, or firmware that must operate properly to ensure that the flight safety official has the accurate vehicle performance data needed to make a flight termination decision.

(h) *Component storage, operating, and service life.* All flight termination system components must have a specified storage life, operating life, and service life. Service life is the total time that a component spends in storage and after installation on the launch vehicle through the end of flight. The storage or service life of a component must start upon completion of the component's acceptance testing. Operating life must start upon activation of the component or installation of the component on a launch vehicle, whichever is earlier. A flight termination system component must function without degradation in performance when subjected to the full length of its specified storage life, operating life, and service life. A launch operator shall ensure that each component used in a flight termination system does not exceed its storage, operating, or service life before flight. A launch operator shall ensure that age surveillance testing, in accordance with appendix E of this part, is performed to verify or extend a component's storage, operating, or service life.

§ 417.307 Flight termination system environment survivability.

(a) *General.* The design of a flight termination system and its components, including all mounting hardware, cables and wires, must provide for the system and each component to function without degradation in performance when subjected to dynamic environment levels greater than those that it will experience during environmental stress screening tests, ground transportation, storage, launch processing, system checkout, and flight up to the point that the launch vehicle could no longer impact any populated or other protected area, or when subjected to dynamic environment levels greater than those that would cause structural breakup of the launch vehicle.

(b) *Maximum predicted environments.* A launch operator shall determine, based on analysis, modeling, testing, or flight data, all maximum predicted environments for the non-operating and operating environments that a flight termination system is to experience. The non-operating and operating environments must include, but need not be limited to, thermal range, vibration, shock, acceleration, acoustic, and other environments where applicable to a launch, such as humidity, salt fog, dust, fungus, explosive atmosphere, and electromagnetic energy. The specific environments that apply to the design of flight termination system components are identified in appendix D of this part. A launch operator shall determine each maximum predicted environment in accordance with the following:

(1) If there are fewer than three samples of flight data, a launch operator shall add no less than a 3 dB margin for vibration, 4.5 dB for shock, and plus and minus 11°C for thermal range to each maximum predicted environment identified through analysis.

(2) For a new launch vehicle or for a launch vehicle for which there is no empirical data available or empirical data for fewer than three flights, a launch operator shall monitor launch vehicle flight environments with telemetry to verify each maximum predicted environment. A launch operator shall ensure that each maximum predicted environment for any future launch is adjusted to reflect the flight data obtained through monitoring. A launch operator's post-launch report, submitted in accordance with § 417.117(h), must contain the results of any flight environment monitoring performed to verify the maximum predicted environments.

(3) A launch operator shall monitor each transportation, storage, launch processing, and system checkout environment, and adjust the associated maximum predicted environments to reflect the true environments.

(4) The launch operator shall notify the FAA of any change to any maximum predicted environment.

§ 417.309 Command destruct system.

(a) A flight termination system must include a command destruct system that is initiated by radio command and meets the redundancy and other component requirements provided in appendix D of this part. Redundant radio command receiver decoders must be installed on or above the last propulsive launch vehicle stage or payload capable of reaching a populated or other protected area before orbital insertion.

(b) The initiation of a command destruct system must result in accomplishing all flight termination system functions in accordance with § 417.303.

(c) A command destruct system must operate with a radio frequency input signal that has an electromagnetic field intensity of 12 dB below the intensity provided by a command control system transmitter over 95 percent of the radiation sphere surrounding a launch vehicle at any point along the launch vehicle's trajectory.

(d) The design of a command destruct system must provide for the command destruct system to survive the breakup of the launch vehicle to the point that all flight termination functions would be accomplished in accordance with § 417.303. Otherwise, the stage containing the command destruct system must also include an inadvertent separation destruct system implemented in accordance with § 417.311. A launch operator shall perform a breakup analysis in accordance with § 417.329 to demonstrate the survivability of a command destruct system.

(e) A command destruct system must receive and process a valid arm command before accepting a destruct command and destroying the launch vehicle. For any liquid propellant, a command destruct system must non-destructively shut down any thrusting liquid engine as a prerequisite for destroying the launch vehicle.

§ 417.311 Inadvertent separation destruct system.

(a) Each stage or strap-on motor capable of reaching a populated or other protected area before orbital insertion, and which does not possess its own complete command destruct system, including command destruct receivers and associated radio frequency hardware, must be equipped with an inadvertent separation destruct system. An inadvertent separation destruct system is an automatic destruct system that uses mechanical means to trigger the destruction of a stage. If a command destruct system on a stage does not satisfy the requirement of § 417.309(d) that the command destruct system survive breakup of the launch vehicle, a launch operator must also use an inadvertent separation destruct system on that stage.

(b) The initiation of an inadvertent separation destruct system must result in accomplishing all flight termination system functions required by § 417.303 and that apply to the stage or strap-on motor on which it is installed.

(c) An inadvertent separation destruct system must be activated by a device that senses launch vehicle breakup or premature separation of the stage or strap-on motor on which it is located.

(d) An inadvertent separation destruct system must be located to survive during launch vehicle breakup and to ensure its own activation. A launch operator shall perform a flight termination system survivability analysis that accounts for breakup of the launch vehicle and the timing of planned launch vehicle staging events. The analysis shall be used to determine the method of activation and location of an inadvertent separation destruct system that will ensure its survivability and activation during breakup of the launch vehicle.

(e) An electrically initiated inadvertent separation destruct system must have a dedicated power source that supplies the energy to initiate the destruct ordnance.

§ 417.313 Flight termination system safing and arming.

(a) *General.* The design of a flight termination system must provide for safing and arming of all flight termination system ordnance through the use of ordnance initiation devices or arming devices, also referred to as safe and arm devices, that provide a removable and replaceable mechanical barrier or other positive means of interrupting power to each of the ordnance firing circuits to prevent inadvertent initiation of ordnance.

(b) *Flight termination system arming.* The design of a flight termination system must provide for each flight termination system ordnance initiation device or arming device to be armed prior to arming any launch vehicle or payload propulsion ignition circuits. For a launch where propulsive ignition occurs after first motion of the launch vehicle, the design of a flight termination system must provide an ignition interlock that prevents the arming of any launch vehicle or payload propulsion ignition circuits unless all flight termination system ordnance initiation devices and arming devices are armed.

(c) *Preflight safing.* The design of a flight termination system must provide for remote and redundant safing of all flight termination system ordnance initiation devices and arming devices before launch and in case of launch abort or recycle operations.

(d) *In-flight safing.* If flight termination system ordnance is to be safed after a stage or strap-on motor is spent, attains orbit, or can no longer reach any populated or other protected area, the flight termination system safing design must provide for the following:

(1) Any onboard launch vehicle hardware or software used to automatically safe flight termination system ordnance must be single fault tolerant against inadvertent safing. An automatic safing design must satisfy the following:

(i) Any automatic safing must depend on at least two independent parameters, such as time of flight or altitude. The safing criteria for each independent parameter must ensure that the flight termination system on a stage or strap-on-motor can only be safed once the stage or strap-on motor attains orbit or can no longer reach a populated or other protected area.

(ii) An automatic safing design must ensure that all flight termination system ordnance initiation devices and arming devices remain armed during flight until the safing criteria for at least two independent parameters are met.

(iii) If a launch operator proposes to establish any single safing criterion as a value that may be achieved before normal thrust termination of the associated stage or strap-on motor, a launch operator shall demonstrate to the FAA, through the licensing process, that the greatest remaining thrust, assuming a three-sigma high engine performance, can not result in the stage or strap-on motor reaching a populated or other protected area.

(2) If a command destruct system is to be safed by radio command, the command control system used for in-flight safing must be single fault tolerant against inadvertent safing. A launch operator shall implement operational procedures to ensure that launch support personnel do not safe a flight termination system by radio command until the launch vehicle attains orbit or can no longer reach any populated or other protected area.

(e) *Safe and arm monitoring.* The design of a flight termination system must provide for remote monitoring of the safe and arm status of each flight termination system ordnance initiation device and arming device. Safe and arm monitoring circuits must comply with appendix D of this part.

§ 417.315 Flight termination system testing.

(a) *General.* A launch operator shall use flight termination system components that satisfy the qualification, acceptance, and age surveillance test requirements provided in appendix E of this part and any other test requirements established during the licensing process. In addition, a flight termination system and its components shall be subjected to preflight tests in accordance with § 417.317.

(b) *Test plans.* For each launch, a launch operator shall implement written test plans and procedures that specify the test parameters, including pass/fail criteria, for each test and the testing sequence required by appendix E of this part for the applicable component. A launch operator shall also implement test plans for the preflight tests required by § 417.317. Upon review of a proposed launch, the FAA may identify and require additional testing needed to address any unique flight termination system design or operational environment.

(c) *Performance variation.* All performance parameters measured during component testing shall be documented for comparison to previous and subsequent tests to identify any performance variations that may indicate potential workmanship or defects that could lead to a failure of the component during flight.

(d) *Testing of piece parts.* All electronic piece parts used in a flight termination system or a flight termination system component must be tested in accordance with appendix F of this part.

(e) *Visual inspection.* Visual inspections for workmanship and physical damage must be performed before and after each test.

(f) *Test reports.* A launch operator shall prepare test reports for each launch. A test report must document all flight termination system test results and test conditions. Also, any analysis performed in lieu of testing shall be documented in a test report. The test results must be traceable to each applicable system and component using serial numbers or other identification. A test report must include any data that represents ''family characteristics'' to be used for comparison to subsequent tests of components and systems. Any test failure or anomaly, including any variation from an established performance baseline, must be documented with a description of the failure or anomaly, each corrective action taken, and all results of additional tests. Each test report must include a signed statement by each person performing the test and any analysis, attesting to the accuracy and validity of the results.

(1) *Qualification test reports.* A launch operator shall submit all qualification test reports to the FAA no later than six months prior to the first flight attempt. For subsequent launches of the same launch vehicle, a launch operator shall submit qualification test reports for any changes to the flight termination system.

(2) *Acceptance, age surveillance, and preflight test reports.* A launch operator shall submit a summary of each acceptance and age surveillance test no later than 30 days prior to the first flight attempt for each launch. The summary must identify when and where the tests were performed and provide the results. Complete acceptance, age surveillance, and preflight test reports shall be made available to the FAA upon request. A launch operator shall immediately report any failure of a preflight test to the FAA. The resolution of a preflight test failure must be approved by the FAA through the licensing process prior to flight.

(g) *Redesign and retest.* In the case of a redesign of a component due to a failure during testing, all previous tests applicable to the redesign shall be repeated unless the launch operator demonstrates that other testing achieves an equivalent level of safety.

(h) *Configuration management and control.* A launch operator shall ensure that a flight termination system component's manufactured parts, materials, processes, quality controls, and procedures are standardized and maintained in accordance with the launch operator's configuration management and control plan submitted during the licensing process according to § 415.119(e) of this chapter. A launch operator shall ensure that subsequent production items are identical to the components subjected to qualification testing. If there is a change in the design of a qualified component, including any change in a component's parts, the component must be re-qualified in accordance with appendix E of this part.

§ 417.317 Flight termination system preflight testing.

(a) *General.* A launch operator shall conduct preflight flight termination system testing at the component level and the system level in accordance with this section and the applicable requirements provided in § 417.315.

(b) *Preflight component tests.* Preflight component tests shall be conducted at the launch site after qualification and acceptance testing to detect any change in performance that may have resulted from shipping, storage, or other environments that may have affected performance. Performance parameter measurements shall be made during preflight component tests and compared to the acceptance test performance baseline to identify any performance variations, including out-of-family data, which may indicate potential defects that could result in an in-flight failure. Preflight component tests shall be conducted in accordance with this section.

(c) *Batteries.* Each flight termination system battery shall be tested as follows:

(1) The preflight activation and testing of a flight termination system battery prior to installation on a launch vehicle shall include:

(i) Any acceptance testing not previously completed.

(ii) Open circuit testing of each flight termination system battery and each battery cell.

(iii) Load testing of each completed battery assembly.

(iv) Testing of continuity and isolation of each connector.

(v) For manually activated batteries, the pin to case voltage shall be tested to ensure no electrolyte spillage during activation.

(2) A launch operator shall ensure that the time interval between preflight activation and testing of a battery and flight does not exceed the battery's operating life stand time capability.

(3) Battery activation processes and procedures shall be identical to those used during qualification testing.

(4) The preflight testing of a nickel cadmium battery prior to installation shall satisfy the following requirements and in the following order:

(i) The battery shall be initially charged at a rate equal to the battery amp hour capacity divided by 20 (C/20 rate) for 2 hours and then further charged at a C/10 rate for 15 hours.

(ii) The battery shall then be discharged at a C/2 rate to 0.9 volts per cell battery voltage, then discharged at C/10 rate until the first cell reaches 0.1 volts.

(iii) The battery shall then be discharged across a resistor with resistance in ohms equal to the number of cells in the battery times 10 divided by the first battery amp hour capacity until the first battery cell reaches 0.05 volts.

(iv) The battery shall then be recharged at 20 ±5 °C and at a C/10 rate for 16 hours.

(v) The battery shall then be subjected to 20 °C capacity and overcharge testing for 3 cycles.

(vi) The battery shall then be subjected to capacity retention and final impedance and pulse voltage determination at 20 °C and then discharged at −10 °C for 1 cycle.

(d) *Preflight testing of a safe and arm device that has an internal electro-explosive device.* An internal electro-explosive device in a safe and arm device shall undergo preflight testing in accordance with the following:

(1) Preflight testing shall be performed no earlier than 10 calendar days before flight.

(2) Preflight testing must include visual checks for signs of physical defects.

(3) Preflight testing must include safing and arming each device and performing continuity and resistance checks of the electro-explosive device circuit in both the arm and safe position.

(e) *Preflight testing for an external electro-explosive device.* An external electro-explosive device in a safe and arm device shall undergo preflight testing in accordance with the following:

(1) Preflight testing shall be performed no earlier than 10 calendar days before flight.

(2) Preflight testing must include visual checks for signs of physical defects and resistance checks of the electro-explosive device.

(f) *Preflight testing for an exploding bridgewire firing unit.* An exploding bridgewire firing unit must undergo preflight testing in accordance with the following:

(1) Preflight testing shall be performed no earlier than 10 calendar days before flight.

(2) Preflight testing must include verification of bridgewire continuity.

(3) Where applicable, preflight testing shall include high voltage static and dynamic gap breakdown voltage tests.

(g) *Preflight testing for command destruct receivers and other electronic components.* Electronic components shall include any flight termination system component that contains piece part circuitry such as a command destruct receiver. A launch operator shall conduct preflight testing of a command destruct receiver or other electronic component in accordance with the following:

(1) Preflight testing shall be accomplished no earlier than 180 calendar days prior to flight. If the 180-day period expires before flight, an installed electronic component must either be replaced by one that meets the 180-day requirement or tested in place in accordance with an alternate preflight test plan that must be approved by the FAA, through the licensing process, prior to its implementation.

(2) Preflight testing must measure all performance parameters at ambient temperature. The test procedures must satisfy the requirements of appendix E of this part.

(3) Acceptance tests may be substituted for the preflight tests if the acceptance tests are performed no earlier than 180 calendar days prior to flight.

(h) *Preflight subsystem and system level tests.* A launch operator shall conduct preflight subsystem and system level tests of the flight termination system after its components are installed on a launch vehicle to ensure proper operation of the final subsystem and system configurations. Data obtained from these tests shall be compared for consistency to the preflight component tests and acceptance test data to ensure there are no discrepancies indicating a flight reliability concern. Preflight subsystem and system level tests shall be in accordance with the following:

(1) Antennas and associated radio frequency systems shall be tested once installed in their final flight configuration to verify that the voltage standing wave ratio and any insertion losses are within the design limits.

(2) A launch operator shall perform a system level radio frequency preflight test from each command control system transmitter antenna used for the first stage of flight to each command receiver no earlier than 90 days before flight to validate the final integrity of the radio frequency system. These tests shall include calibration of the automatic gain control signal strength curves, verification of threshold sensitivity for each command, and verification of operational bandwidth.

(3) A launch operator shall perform end-to-end tests on all flight termination system subsystems, including command destruct systems and inadvertent separation destruct systems. End-to-end tests shall be performed no earlier than 72 hours before the first flight attempt. If the flight is delayed more than 14 calendar days or the flight termination system configuration is broken or modified for any reason, such as to

replace batteries, the end-to-end tests shall be repeated no earlier than 72 hours before the next flight attempt. A launch operator shall perform end-to-end tests with the flight termination system in its final onboard launch vehicle configuration except for the ordnance initiation devices. End-to-end tests must incorporate the following:

(i) A destruct initiator simulator that satisfies § 417.327 shall be installed in place of each flight initiator to verify that the command destruct and inadvertent separation destruct systems deliver the energy required to initiate flight termination system ordnance.

(ii) All flight termination systems shall be powered by the batteries that will be used for flight. A flight termination system battery shall not be recharged at any time during or after end-to-end testing. If the battery is recharged at any time before flight the entire end-to-end test shall be performed again.

(iii) All command destruct receiver commands shall be exercised using the command control system transmitters in their flight configuration.

(iv) All primary and redundant flight termination system components, circuits and command control system transmitting equipment shall be verified as operational.

(v) The triggering mechanism of all electrically initiated inadvertent separation destruct systems shall be exercised and verified as operational.

(4) An open-loop radio frequency test shall be performed, no earlier than 60 minutes prior to flight, to validate the entire radio frequency command destruct link. This test shall be performed in accordance with the following:

(i) All flight termination system ordnance initiation devices must be in a safe condition.

(ii) Flight batteries must power all receiver decoders and other electronic components. The launch operator shall ensure that the testing allows for any warm-up time needed to ensure the reliable operation of electronic components.

(iii) All receiver decoder commands except destruct shall be exercised open loop from the command control transmitters.

(iv) All receiver decoders and all command control transmitters shall be tested and verified as operational.

(5) If the integrity of a subsystem or system is compromised due to a configuration change or other event, such as a lightning strike or inadvertent connector mate or de-mate, the associated preflight subsystem or system testing shall be repeated.

§ 417.319 Flight termination system installation procedures.

(a) A launch operator shall implement written procedures to ensure that flight termination system components, including electrical components and ordnance, are installed on a launch vehicle in accordance with the flight termination system design. These procedures must ensure that:

(1) All personnel involved are qualified for the task in accordance with § 417.105.

(2) The installation of all flight termination system mechanical interfaces is complete.

(3) Qualified personnel use calibrated tools to install ordnance when a specific standoff distance is necessary to ensure that the ordnance has the desired effect on the material it is designed to cut or otherwise destroy.

(b) Flight termination system installation procedures must include, but need not be limited to the following:

(1) A description of each task to be performed, each facility to be used, and each and any hazard involved.

(2) A checklist of tools and equipment required.

(3) A list of personnel required for performing each task.

(4) Step-by-step directions written with sufficient detail for a qualified person to perform each task. The directions must identify any tolerances that must be met during the installation.

(5) Steps for inspection of installed flight termination system components, including quality assurance oversight procedures.

(6) A place for the personnel performing the procedure to initial or otherwise signify that each step is accomplished and for recording the outcome and any data verifying successful installation.

§ 417.321 Flight termination system monitoring.

(a) A launch operator shall ensure that the following data is available through monitoring to determine the status of a flight termination system prior to and during flight:

(1) The signal strength telemetry output voltage for the command destruct receiver.

(2) All command destruct receiver outputs commands.

(3) Status of each ordnance initiation device, whether in the arm or safe position.

(4) Voltage monitoring for each flight termination system battery.

(5) Current monitoring for each flight termination system battery.

(6) Status of any special electrical inhibits within the flight termination system.

(7) Parameters of each high energy firing unit, such as arm input, power, firing capacitor and trigger capacitor.

(8) Electrical inadvertent separation destruct system safe, arm, and destruct output command status.

(9) Temperature monitoring of each flight termination system battery.

(10) Power switch status, whether on internal or external power.

(11) Environmental monitoring needed to verify each maximum predicted environment required by § 417.307 and appendix D of this part.

(b) Monitor consoles must include all communications and monitoring capability necessary to ensure that the status of a flight termination system can be ascertained and relayed to the appropriate launch officials.

(c) A launch operator shall establish pass/fail flight commit criteria in accordance with § 417.113 for monitored flight termination system parameters to support launch abort decisions and to ensure a flight termination system is performing as required at the time of flight. The flight commit criteria shall be incorporated in a launch operator's launch plans as submitted to the FAA through the licensing process.

§ 417.323 Command control system requirements.

(a) *General.* A launch operator shall employ a command control system as part of a flight safety system. A command control system must consist of the flight safety system elements that ensure that a command signal will be transmitted if needed during the flight of a launch vehicle and received by the onboard vehicle flight termination system. A command control system, including all subsystems and support equipment, must satisfy the requirements of this section and must include, but need not be limited to the following:

(1) All flight termination system activation switches at a flight safety official console;

(2) All intermediate equipment, linkages, and software;

(3) Any auxiliary stations;

(4) Each command transmitter and transmitting antenna; and

(5) All support equipment that is critical for reliable operation such as power, communications, and air conditioning systems.

(b) *Compatibility.* A launch operator's command control system must be compatible with the flight termination system onboard the launch operator's launch vehicle. A launch operator shall demonstrate compatibility through analysis and testing in accordance with

§ 417.315, § 417.325, D417.15 of appendix D of this part, and E417.19 of appendix E of this part.

(c) *Reliability design.* A command control system must have a reliability design of 0.999 at a confidence level of 95 percent. A launch operator shall perform a system reliability analysis in accordance with § 417.329 to demonstrate whether a command control system satisfies this requirement. The reliability analysis must demonstrate the command control system's reliability when operating for the time period from completion of preflight testing and system verification performed in accordance with § 417.325(c) through initiation of flight and until the no longer endanger time determined in accordance with § 417.221(c). In addition, a launch operator's command control system must satisfy the following:

(1) A command control system must not contain any single-failure-point that, upon failure, would inhibit the required functioning of the system or cause the transmission of an undesired flight termination message.

(2) A command control system's design must ensure that the probability of transmitting an undesired or inadvertent command during flight is less than 1×10^{-7}.

(d) *Command control system delay time.* A command control system's radio message delay time, from initiation of a flight termination command at the flight safety official console to transmission from the command transmitter antenna, must be sufficiently low to complete the transmission of the command destruct sequence of signal tones prior to an errant launch vehicle exiting the 3–dB point of the command antenna pattern.

(e) *Configuration management and control.* The configuration of a command control system must be controlled in accordance with the launch operator's configuration management and control plan submitted during the licensing process according to § 415.119(e).

(f) *Electromagnetic interference.* Each command control system component must be designed and qualified to function within the electromagnetic environment to which it will be exposed. A command control system must include electromagnetic interference protection to prevent any electromagnetic interference from inhibiting the required functioning of the system or causing the transmission of an undesired flight termination command. Electromagnetic interference protection must also be provided for any susceptible remote control data processing and transmitting systems that are part of the command control system.

(g) *Command transmitter failover.* A command control system must include independent, redundant transmitter systems that automatically switch or ''fail-over'' from a primary transmitter to a secondary transmitter when a condition exists that indicates potential failure of the primary transmitter. The switch must be automatic and provide all the same command control system capabilities through the secondary transmitter system. The secondary transmitter system must respond to any transmitter system configuration and radio message orders established for the launch. A launch operator shall establish and implement fail-over criteria that trigger automatic switching from the primary transmitter system to the secondary system during any period of flight up to the no longer endanger time. A launch operator's fail-over criteria must account for each of the following transmitter performance parameters and failure indicators:

(1) Low transmitter power,

(2) Center frequency shift,

(3) Tone deviation,

(4) Out of tolerance tone frequency,

(5) Out of tolerance message timing,

(6) Loss of communication between central control and transmitter site,

(7) Central control commanded status and site status disagree,

(8) Transmitter site fails to respond to a configuration or radiation order within a specified period of time, and

(9) Tone imbalance.

(h) *Radio carrier illumination.* A command control system must be capable of providing the radiated power density that a flight termination system would need to activate during flight and in accordance with § 417.309(c). A launch operator shall ensure that manual or automatic switching between transmitter systems, including fail-over, does not result in the radio carrier being off the air long enough for the airborne flight termination system to be captured by some other unauthorized transmitter. This includes any loss of carrier and any simultaneous multiple radio carrier transmissions from two transmitter sites during switching.

(i) *Command control system monitoring and control.* A command control system must be capable of being controlled and monitored from the flight safety official console and the transmitter sites in accordance with § 417.327(g). A command control system's design must allow for real-time selection of a transmitter, transmitter site, communication circuits, and antenna configuration. A launch operator shall establish procedures for sending commands from the transmitter sites in the event of a failure of the flight safety official console.

(j) *Transmitter system.* A command control transmitter system must:

(1) Transmit signals that are compatible with the airborne flight termination system in accordance with D417.15 of appendix D of this part.

(2) Ensure that commands transmitted to a flight termination system have priority over any other commands transmitted.

(3) Employ an authorized radio carrier frequency and bandwidth.

(4) Not transmit a signal that could interfere with other airborne flight termination systems on other launch vehicles that may operate from the same launch site. A launch operator shall coordinate with any launch site operator and other launch operators to ensure this requirement is met.

(5) Transmit an output bandwidth that is consistent with the signal spectrum power used in the launch operator's link analysis performed in accordance with § 417.329(h).

(6) Not transmit other frequencies that could degrade the airborne flight termination system's performance. Any spurious signal levels must be at least 60 dB below the radio frequency output signal level from the transmitter antenna.

(7) Ensure that all requirements of this section are satisfied during application and removal of tone frequencies.

(k) *Command control system antennas.* A command control system antenna or system of antennas must provide command signals to a flight termination system throughout normal and non-nominal launch vehicle flight regardless of launch vehicle orientation and must satisfy the following:

(1) An antenna must have a beam-width that allows sufficient reaction time to complete the transmission of the command destruct sequence of signal tones prior to an errant launch vehicle exiting the 3–dB point of the antenna pattern. The beam-width and associated reaction time must account for the pointing accuracy of the antenna. The antenna beam-width must encompass the normal flight trajectory boundaries for the portion of flight that the antenna is scheduled to support.

(2) Each antenna must be located to achieve line of site between the antenna and the launch vehicle during the portion of flight that the antenna is scheduled to support.

(3) An antenna system must provide a continuous omni-directional radio carrier illumination pattern that covers the launch vehicle's flight from the launch point to no less than an altitude

of 50,000 feet above sea level unless the launch operator demonstrates, clearly and convincingly, through the licensing process that an equivalent level of safety can be achieved with a steerable antenna for that portion of flight.

(4) An antenna must radiate circularly polarized radio waves that are compatible with the flight termination system antennas on the launch vehicle.

(5) A steerable antenna must be controlled manually at the antenna site or by remote slaving data from a launch vehicle tracking source.

(6) A steerable antenna must be capable of supplying the required power density in accordance with paragraph (h) of this section to the flight termination system on the launch vehicle for the portion of flight that the antenna is scheduled to support. A steerable antenna's positioning lag, accuracy, and slew rates must allow for tracking a launch vehicle during nominal flight within one half of the antenna's beam width and for tracking of an errant launch vehicle to ensure that the delay time and beam-width requirements of paragraphs (d) and (k)(1) of this section are satisfied. A launch operator shall ensure that the worst-case power loss due to antenna pointing inaccuracies is factored into the radio frequency link analysis performed in accordance with § 417.329(h).

§ 417.325 Command control system testing.

(a) *General.* A command control system, its subsystems, and components must undergo acceptance and preflight tests in accordance with the requirements of this section. A launch operator shall ensure that testing of a command control system is conducted in accordance with the following:

(1) Each test shall be conducted in accordance with a written test plan that specifies the procedures and test parameters for the test and the testing sequence to be followed. A test plan must include instructions on how to handle procedural deviations and how to react to test failures.

(2) Visual inspections for workmanship and physical damage shall be performed before and after each test.

(3) When a component is replaced or redesigned, all previous acceptance and preflight tests shall be repeated.

(4) Modifications to command control system hardware and software shall be validated with end to end regression testing.

(5) Compatibility of the command control system with a launch vehicle's onboard flight termination system shall be tested independently and as part of preflight testing.

(b) *Acceptance testing.* All new or modified command control system hardware and software must undergo acceptance testing to verify that the system meets the functional and performance requirements in § 417.323. Acceptance testing shall include system interface validation, integrated system-wide validation, and must satisfy the following:

(1) All new or modified command control system hardware and software shall be validated using a system acceptance test plan. A system acceptance test plan shall include testing of the new components or subsystems, system interface validation, and integrated system wide validation. The system acceptance test plan and the results of the acceptance testing shall both be reviewed by and signed as accurate by the launch operator's launch safety official.

(2) A launch operator shall ensure that a failure modes and effects analysis is performed for the design of each new system and any modification to an existing system.

(3) Computing systems and software testing must satisfy the requirements of § 417.123 and appendix H of this part.

(4) A launch operator shall ensure that testing is performed to measure and validate the command control system performance parameters contained in § 417.323.

(c) *Preflight testing.* A command control system shall undergo preflight testing in coordination with preflight testing of an associated flight termination system and must satisfy the requirements of § 417.317. In addition, preflight tests of a command control system to be performed in preparation for the coordinated flight termination system tests must satisfy the following requirements:

(1) *Auto carrier tests.* A launch operator shall verify that, for any auto carrier switching system, the switching algorithm selects the proper transmitter site and the auto carrier switching system enables the selected site. This test may be conducted simultaneously with any theoretical data run. This test shall be performed no earlier than four hours before a scheduled flight time.

(2) *Command transmitter switching tests.* A launch operator shall perform an open loop end-to-end verification test of each element of a command control system from the flight safety official console to each command transmitter site to verify the integrity of the overall system. A launch operator shall ensure that successful verification is performed for each flight safety official console and remote command transmitter site combination. The verification must be initiated by transmitting all functions programmed for the launch from the flight safety control console. The verification shall be concluded at each command transmitter site by operator confirmation that the proper function commands were received. This test may be performed simultaneously with the independent radio frequency open loop validation required by paragraph (c)(3) of this section. A launch operator shall conduct switching tests in accordance with the following:

(i) The verification shall be conducted as close to the planned flight time as operationally feasible and must be repeated in the event that the command control system configuration is broken or modified before launch.

(ii) All measurements will be repeated for each flight safety official console and remote command site combination, for all strings and all operational configurations of cross-strapped equipment.

(3) *Independent radio frequency open loop verification tests.* A launch operator shall perform an open loop end-to-end verification of each element of a command control system from the flight safety official console to each command transmitter site to quantitatively verify the quality of the transmitted information. This verification must be performed for each flight safety official console and remote command transmitter site combination. The verification shall be initiated by transmitting all functions programmed for the launch from the flight safety control console. The verification shall be concluded, at each command site, by measuring all applicable parameters received and transmitted with analysis equipment that does not physically interface with any elements of the operational command control system. This verification may be performed simultaneously with the switching tests required by paragraph (c)(2) of this section. A launch operator shall conduct open loop end-to-end verification tests in accordance with the following:

(i) The verification shall be conducted as close to the planned launch time as operationally feasible and must be repeated in the event that the command control system configuration is broken or modified before launch.

(ii) Test equipment must be capable of validating transmission of the required parameters.

(iii) All measurements shall be repeated for each flight safety official console and remote command transmitter site combination, for all strings and all operational configurations of cross-strapped equipment.

(iv) The test code used for arm and destruct shall include at least one occurrence of each tone programmed for the specific mission.

(v) The testing must verify that all critical command control system performance parameters are within their performance specifications. These parameters include, but need not be limited to:

(A) Transmitter power output,

(B) Center frequency stability,

(C) Tone deviation,

(D) Tone frequency,

(E) Message timing,

(F) Status of communication circuits between the flight safety official console and any supporting command transmitter sites,

(G) Status agreement between the flight safety official console and any supporting command transmitter sites,

(H) Fail-over conditions, and

(I) Tone balance.

(d) *Test reports.* A launch operator shall prepare test reports on command control system testing for each launch. A test report must document all command control system test results and test conditions. Also, any analysis performed in lieu of testing shall be documented in the test report. The test results must be traceable to each applicable system and component using serial numbers or other identification. Any test failure or anomaly, including any variation from an established performance baseline, must be documented with a description of the failure or anomaly, each corrective action taken, and all results of additional tests. A test report must identify any test failure trends. Each test report must include a signed statement by each person performing the test and any analysis, attesting to the accuracy and validity of the results. A launch operator shall submit an acceptance-test report summary to the FAA no later than 30 days prior to the first flight attempt. Any failure of a preflight test shall be reported to the FAA immediately. Resolution of all failures must be documented and approved by the FAA through the licensing process prior to flight.

§ 417.327 Support systems.

(a) *General.* A flight safety system must consist of compatible launch vehicle tracking, visual data source, telemetry, communications, data display, and data recording systems that support the flight safety official. Each support system must have written performance specifications that contain the particulars of how the system functions and satisfies the requirements of this section. For each launch, a launch operator shall perform tests of each support system to ensure it functions in accordance with its performance specifications.

(b) *Launch vehicle tracking.* A flight safety system must include a launch vehicle tracking system that provides continuous launch vehicle position and status data to the flight safety official from liftoff through the time that the launch vehicle reaches orbit or can no longer reach any protected area. A launch vehicle tracking system for a launch that employs a flight safety system must satisfy the following requirements:

(1) A tracking system must consist of two sources of valid launch vehicle position data. The two data sources must be independent of one another, and at least one source must be independent of any system or component associated with determining or measuring vehicle position or performance used to aid the vehicle guidance system unless the launch operator demonstrates, clearly and convincingly, through the licensing process that another approach, such as the use of redundant vehicle guidance units, provides an equivalent level of safety for the launch.

(2) All ground tracking systems and components must be compatible with the tracking system components onboard the launch vehicle.

(3) When a flight safety system uses radar as an independent tracking source, the vehicle must have a tracking beacon onboard the launch vehicle unless the launch operator provides a clear and convincing demonstration through the licensing process that any skin tracking maintains a tracking margin of no less than six dB above noise throughout the period of flight that the radar is used and that the flight control lines and flight safety limits account for the larger tracking errors associated with skin tracking.

(4) Tracking system data must be provided to the flight safety official through the flight safety data display system at the flight safety official console.

(5) A tracking system must verify the accuracy of any launch vehicle tracking data provided to the flight safety official during flight. A tracking source that is independent of any system used to aid the launch vehicle guidance system shall validate launch vehicle guidance data before a flight safety official uses the launch vehicle guidance data as a source of tracking data in the flight termination decision process.

(c) *Visual tracking.* A flight safety system must include launch vehicle observers stationed at program and back azimuth positions to provide flight status data to the flight safety official at liftoff and during the early seconds of flight. A launch operator shall ensure that each launch vehicle observer meets the requirements of § 417.331(i) and § 417.331(j). Skyscreens or other visual data sources operated by a launch vehicle observer may be used as part of a launch operator's flight safety system.

(d) *Telemetry system.* A flight safety system must include a telemetry system that provides continuous, accurate flight safety data during preflight operations, lift-off, and during flight until the launch vehicle reaches orbit or can no longer reach any populated or other protected area. A telemetry system must meet the following requirements:

(1) An onboard telemetry system must monitor and transmit data to the flight safety official console regarding the following:

(i) Inertial measurement data from vehicle guidance and control.

(ii) Vehicle flight performance data, including motor chamber pressure and thrust vector control data.

(iii) Status of onboard tracking system components.

(iv) All flight termination system monitoring data in accordance with § 417.321.

(2) A telemetry receiving system must acquire, store, and provide real time data to the flight safety official for any flight termination decision.

(3) A telemetry system must provide data to the flight safety official at the flight safety official console through the flight safety data processing system.

(e) *Communications system.* A flight safety system must include a communications network that connects all flight safety functions with all launch control centers and any down range tracking and command transmitter sites. A flight safety system must provide for recording all data and voice communications channels during launch countdown and flight.

(f) *Flight safety data processing, display, and recording system.* A flight safety system must include a flight safety data processing system that processes data for display and recording to support the flight safety official's monitoring of the launch. A flight safety data processing system must:

(1) Receive vehicle status data from tracking and telemetry, evaluate the data for validity, and provide valid data for display and recording.

(2) Perform any reformatting of the data as appropriate and forward it to display and recording devices.

(3) Display real-time data against background displays of the nominal trajectory and flight safety limits established in accordance with the flight safety analysis required by subpart C of this part.

(4) Display and record raw input and processed data at 0.1-second intervals.

(5) Record the timing of when flight safety system commands are input by the flight safety official or other flight safety crewmembers.

(g) *Flight safety official console.* A flight safety system must include a flight safety official console that contains the flight safety displays and controls used by a flight safety official. A flight safety official console must provide for monitoring and evaluating launch vehicle performance, provide for communications with other flight safety and launch personnel, and must contain the controls for initiating flight termination.

(1) Data displayed on a flight safety official console must include, but need not be limited to, the following:

(i) Instantaneous vacuum impact point or drag corrected debris footprint by tracking and telemetry state vectors.

(ii) Present launch vehicle position and velocities as a function of time.

(iii) Vehicle status data from telemetry, including yaw, pitch, roll, and motor chamber pressure.

(iv) Flight termination system battery levels and receiver gain in relation to receiver sensitivity.

(v) Displays of nominal trajectory, flight safety limits, minimum time to endanger, no longer endanger time, and any overflight gate through a flight control line as determined by the launch operator's flight safety analysis performed in accordance with subpart C of this part.

(vi) Displays of any video data to be used by the flight safety official such as video from optical program and flight line cameras.

(2) A flight safety official console must allow a flight safety official to turn a command transmitter on and off, manually switch from primary to backup transmitter antenna and switch between any transmitter sites. These functions shall be accomplished through controls at the flight safety official console or through communications links at the console between the flight safety official and command transmitter support personnel.

(3) A flight safety official console must include a means of identifying to a flight safety official when the console has primary control of a command transmitter system.

(4) A flight safety official console must provide a means of readily identifying whenever an automatic fail-over of the system transmitters has occurred.

(5) A flight safety official console must be dedicated to the flight safety system and must not rely on time or equipment shared with other systems.

(6) A flight safety official console's inherent delay from message initiation to transmission of the message leading edge must be no more than 55 milliseconds.

(7) All data transmissions links between the console and each transmitter and antenna must consist of two or more complete and independent duplex circuits. These circuits must be routed so that they are physically separated from each other to eliminate any potential single failure point in the command control system in accordance with § 417.323(c)(1).

(8) A launch operator shall employ hardware and procedural security provisions for controlling access to the flight safety official console and other related hardware. These security provisions must ensure no person or system can initiate a flight safety system transmission, either deliberately or inadvertently, unless the transmission is ordered by the flight safety official.

(9) There must be two independent means for the flight safety official to initiate arm and destruct messages. The location and functioning of the controls must provide a flight safety official easy access to the controls and prevent inadvertent activation.

(10) A flight safety official console must include a digital countdown for use in implementing the flight termination rules in accordance with § 417.113 that apply data loss flight times, earliest destruct time, and no longer endanger time determined in accordance with § 417.221. A launch operator shall also provide a manual method of applying the data loss flight times in the event that a flight safety system malfunction prevents the flight control official from viewing a digital countdown of the data loss flight times.

(h) *Support equipment calibration.* A launch operator shall calibrate its support systems and any equipment used to test flight safety system components to ensure that measurement and monitoring devices that support a launch provide accurate indications.

(i) *Destruct initiator simulator.* A launch operator shall use a destruct initiator simulator to simulate a destruct initiator during the flight termination system preflight tests required by § 417.317. This device must have electrical and operational characteristics matching those of the actual destruct initiator. A destruct initiator simulator must:

(1) Monitor the firing circuit output current, voltage, or energy, and latch on when the operating current, voltage, or energy for the initiating device is outputted from the firing circuit.

(2) Remain connected throughout ground processing until the electrical connection of the actual initiators is accomplished.

(3) Include an interlock capability that permits the issuance of destruct commands by test equipment only if the simulator is installed and connected to the firing lines.

(4) For low voltage initiators, provide a stray current monitoring device such as a fuse or automatic recording system capable of indicating a minimum of one tenth of the maximum no-fire current. This stray current monitoring device must be installed in the firing line.

(j) *Timing system.* A launch operator's flight safety system must include a timing system synchronized with the United States Naval Observatory, Washington DC. A launch operator shall use this system to time tag data; initiate first motion signals; synchronize flight safety system instrumentation, including countdown clocks; and time tag recordings of required data and voice communication channels during countdown and flight.

§ 417.329 Flight safety system analysis.

(a) *General.* A launch operator shall perform each system analysis defined by this section to verify that a flight termination system, a command control system, and their components meet the reliability requirements of this subpart. These analyses must be performed following standard industry system safety and reliability analysis methodologies. (Guidelines for performing system safety and reliability analyses may be obtained at http://ast.faa.gov/licensing in FAA Advisory Circular AC 431A, draft available 4/21/99). For each analysis, a launch operator shall prepare an analysis report that documents how the analysis was performed and the findings in accordance with this section.

(b) *System reliability analysis.* A launch operator shall prepare a reliability analysis for the flight termination system and the command control system that demonstrates the analytical reliability of these systems. This analysis shall account for the probability of a flight safety system anomaly occurring and its effects as determined by the fault tree analysis; failure modes, effects, and criticality analysis; and the sneak circuit analysis required by paragraphs (c), (d), and (i) of this section. A launch operator's flight termination system and command control system reliability analysis report must:

(1) Describe how the flight termination system and command control system meet the reliability design requirement of 0.999 at a confidence level of 95 percent.

(2) Provide each reliability model used.

(3) Provide computations on actual or predicted reliability for all subsystems and components.

(4) Describe the effects of storage, transport, handling, maintenance, and operating environments on component reliability.

(5) Describe the interface between the launch vehicle systems and the flight termination system.

(c) *Fault tree analysis.* A launch operator shall perform a fault tree analysis to identify flight termination system paths and command control system paths that could permit an undesired event that would cause the flight safety system to fail to function. A launch operator shall include the probability of occurrence of any undesired event as part of each system's reliability design determination.

(d) *Failure modes effects and criticality analysis.* A launch operator shall perform a failure modes effects and criticality analysis based on failures identified by a fault tree analysis to determine and document all possible failure modes and their effects on flight termination system and command control system performance. The results of a failure modes effects and criticality analysis shall be used as input to the flight safety system reliability analysis. A failure modes effects and criticality analysis must:

(1) Identify all failure modes and their probability of occurrence.

(2) Identify single point failure modes.

(3) Identify areas of design where redundancy is required pursuant to § 417.305.

(4) Identify functions, including redundancy, which are not or cannot be tested.

(5) Provide input to reliability modeling and predictions.

(6) Include any potential system failures due to hardware, software, test equipment, or procedural or human errors.

(e) *Single failure point analysis.* A launch operator shall perform a single failure point analysis to verify that no single failure can cause inadvertent flight termination system activation or disable the flight termination system or command control system.

(f) *Fratricide analysis.* A launch operator shall perform a fratricide analysis to verify that flight termination of a stage will not sever interconnecting flight termination system circuitry or ordnance to other stages until flight termination on the other stages has been initiated.

(g) *Bent pin analysis.* A launch operator shall perform a bent pin analysis for each component to verify that any single short circuit occurring as a result of a bent electrical connection pin shall not result in inadvertent system activation or inhibiting the proper operation of the flight termination system or command control system.

(h) *Radio frequency link analysis.* A launch operator shall perform a radio frequency link analysis of the onboard flight termination system and command control system. This analysis must verify that the system is capable of reliable operation with signals, at the input to the receiver, having electromagnetic field intensity of 12dB below the intensity provided by the command transmitter in accordance with appendix D of this part. A link analysis must include path losses due to plume or flame attenuation, aspect angle, vehicle trajectory, ground system radio frequency characteristics, worst-case power loss due to antenna pointing inaccuracies, and any other attenuation factors. Guidelines for performing a radio frequency link analysis are provided in Range Commanders Council Standard 253 and may be obtained from the FAA (http://ast.faa.gov/licensing).

(i) *Sneak circuit analysis.* A launch operator shall perform a sneak circuit analysis to identify latent paths of an unwanted command that could, when all components are otherwise functioning properly, cause the occurrence of undesired, unplanned, or inhibited functions that could cause a flight termination system or command control system anomaly. The probability of such an anomaly occurring must be incorporated into each system's reliability determination in the system reliability analysis required by paragraph (b) of this section.

(j) *Software and firmware analysis.* A launch operator shall analyze any flight safety system software or firmware that performs a software safety critical function to ensure reliable operation in accordance with appendix H of this part.

(k) *Flight termination system battery capacity analysis.* A launch operator shall perform an analysis to demonstrate that a flight termination system battery has a total amp hour capacity equal to 150% of the capacity that the flight termination system requires to operate during flight plus the capacity needed for load and activation checks, preflight and launch countdown checks, and any potential launch hold time. For a launch vehicle that uses any solid propellant, the battery capacity must allow for an additional 30-minute hang-fire hold time. The battery analysis must also demonstrate each flight termination system battery's ability to meet the charging temperature and current control requirements of appendix D of this part.

(l) *Flight termination system survivability analysis.* A launch operator shall perform a flight termination system survivability analysis that accounts for breakup of the launch vehicle, with and without a commanded flight termination. The analysis shall be used to determine the design and location of the flight termination system components and subsystems. A flight termination system survivability analysis must account for:

(1) Breakup of the launch vehicle due to aerodynamic loading effects at high angle of attack trajectories during early stages of flight.

(2) An engine hard-over nozzle induced tumble during various phases of flight for each stage.

(3) The timing of launch vehicle staging and other events that, when they occur, can result in damaging flight termination system hardware or inhibit the functionality of flight termination system components or subsystems, including any inadvertent separation destruct system.

§ 417.331 Flight safety system crew roles and qualifications.

(a) *General.* Flight safety system hardware must be operated by a flight safety system crew made up of a flight safety official and support personnel possessing the qualifications required by and carrying out the roles defined by this section. A launch operator shall ensure that its flight safety system crewmembers meet the qualification requirements of this section unless the launch operator demonstrates clearly and convincingly through the licensing process that an alternate approach provides an equivalent level of safety. A launch operator shall document each flight safety system crew position description and maintain documentation on individual crew qualifications, experience, and training as part of the personnel certification program required by § 417.105. A flight safety system crewmember may perform the roles of more than one position required by this section for a launch, provided that all the requirements of each role and related tasks are accomplished.

(b) *Flight safety system crew qualifications.* In addition to the qualifications required for specific flight safety system crew positions, all flight safety system crewmembers shall have at least four years experience in safety or a related discipline. The four years of experience must include all of the following:

(1) Two years of experience in launch vehicle or missile operations, aircraft operations, missile or aircraft range operations, or weapons controller operations, while performing duties and functions that require critical real time decision-making.

(2) Knowledge and experience in communications systems and procedures, including both voice and data.

(3) Knowledge and experience in computers, graphical data systems, radar and telemetry real-time data, and flight termination systems.

(4) Training to become familiar with the launch site, launch vehicle, and all applicable flight safety system functions, equipment, and procedures related to a launch before being called upon to support that launch. Each member of the flight safety system crew shall undergo a preflight readiness training program that includes hands-on exercises and simulations of multiple launch scenarios and launch vehicle failure modes.

(c) *Senior flight safety official role.* A launch operator shall designate a senior flight safety official that reports directly to the launch safety director identified in § 417.103, oversees the training and certification of flight safety system crewmembers, defines crew needs for specific launches, and supervises crew performance as follows:

(1) A senior flight safety official shall, during the flight of a launch vehicle, oversee in person the flight safety official's decisions with respect to the flight safety system, including initiation of flight termination. A senior flight safety official may perform as a backup for the flight safety official.

(2) A senior flight safety official shall certify each member of the flight safety system crew for each launch. A senior flight safety official shall develop and implement a certification program that includes:

(i) Mission specific training programs to ensure team readiness.

(ii) Dynamic launch simulation exercises of system failure modes designed to test crew performance, flight termination criteria, and flight safety data displays.

(3) A senior flight safety official shall certify each member of the flight safety system crew as fully qualified when the crewmember is able to perform the functions of a specific crew position for each launch. The senior flight safety official shall:

(i) Verify that a candidate crewmember meets the qualification, training, and performance requirements of the position.

(ii) Identify and implement any additional training, exercises, and refresher training needed to ensure that a crewmember is qualified for each launch.

(d) *Senior-flight safety official qualifications.* A senior flight safety official shall be a qualified flight safety official as described by paragraph (f) of this section with no fewer than three years of flight safety system crew experience. In addition, a senior flight safety official for a specific launch shall have supported or been the flight safety official on at least one prior launch of that or an equivalent launch vehicle.

(e) *Flight safety official role.* A launch operator shall designate a flight safety official for each launch who shall:

(1) Monitor the flight of the vehicle by means of real-time displays of tracking data, including present position and any instantaneous impact point or debris footprint.

(2) Monitor video information, telemetry data, and communications from other flight safety system crewmembers who advise the flight safety official on the status of their task.

(3) Initiate any required flight termination in accordance with the flight termination rules established in accordance with § 417.113.

(f) *Flight safety official qualifications.* In addition to the qualifications required by paragraph (b) of this section, a flight safety official shall have the following knowledge, experience and training:

(1) A bachelors degree in engineering, mathematics, physics or other scientific discipline with equivalent mathematics and physics requirements or equivalent technical experience and education.

(2) Knowledge of the application of safety support systems such as position tracking sources, digital computers, displays, command destruct, communications, and telemetry.

(3) Knowledge of the electrical functions of a flight termination system and understanding of the principles of radio frequency transmission and attenuation.

(4) Knowledge of the behavior of ballistic and aerodynamic vehicles in-flight under the influence of aerodynamic forces.

(5) Experience in missile, space, or aircraft operations requiring real-time decisions in response to changing conditions.

(6) Experience as a certified telemetry safety official as defined in paragraph (g) of this section for at least one launch.

(7) Experience as a certified back azimuth observer as defined in paragraph (i) of this section for at least one launch.

(8) Experience as a certified program observer as defined in paragraph (i) of this section for at least one launch.

(9) Experience, for at least one launch, as an observer of a qualified flight termination system safety official as defined in paragraph (k) of this section.

(10) Experience as an observer and assistant to a qualified flight safety analyst as defined in paragraph (m) of this section on all preparations for at least one launch.

(11) Training on all the components that are involved in the calculation and production of the flight safety displays and the computations of probability of impact and expected casualty. This training shall include the interrelationships and sensitivity of the results to changes in each of the components.

(g) *Telemetry safety official role.* A launch operator shall designate a telemetry safety official for each launch. The safety official shall monitor real-time safety telemetry data from the launch vehicle and advise the flight safety official when normal planned events occur and when any anomalous condition occurs.

(h) *Telemetry safety official qualifications.* In addition to the qualifications required by paragraph (b) of this section, a telemetry safety official shall have the following knowledge, experience, and training:

(1) A working knowledge of telemetry data displays such as strip chart recorders and digital readout systems. A telemetry safety official must know the purpose of each telemetry parameter displayed, know the nominal operating range of each parameter, and recognize anomalous conditions as they occur.

(2) Experience, for at least one launch, as an observer of a qualified telemetry safety official.

(3) Experience performing as a telemetry safety official during training simulations that involve playback of telemetry data on at least three nominal and two failure mission scenarios.

(4) Experience as a telemetry safety official, under the supervision of a qualified telemetry safety official, for at least one launch.

(i) *Launch vehicle observer role.* A launch operator shall designate back azimuth and program launch vehicle observers to establish and remain in visual contact with the launch vehicle during the early portion of flight when the tracking sensors are unable to provide position and predicted impact data to the flight safety official. Vehicle observers shall be in direct communication with, and advise the flight safety official when the launch vehicle engines ignite, the launch vehicle lifts off the pad, and when the launch vehicle pitches over and proceeds downrange. A flight safety system crew shall include, but is not limited to, the following launch vehicle observers:

(1) *Back azimuth observer.* An observer located 180 ± 10 degrees behind the projected launch azimuth.

(2) *Program observer.* An observer located along a line that passes through the launch point and that is perpendicular within ± 10 degrees to the projected launch azimuth.

(j) *Launch vehicle observer qualifications.* In addition to the qualifications required by paragraph (b) of this section, any observer at the back azimuth location and any observer at the program location shall have the following qualifications:

(1) Training in failure modes and how failures would appear to the observer from the observer's location at the time of flight.

(2) Experience observing a qualified launch vehicle observer at the location, for at least one launch.

(3) Experience for at least two launches performing as a launch vehicle observer at the location, under the supervision of a launch vehicle observer qualified at that location.

(k) *Flight termination system safety official role.* A launch operator shall designate a flight termination system safety official for each launch. This person shall monitor the proper installation and testing of the onboard flight termination system prior to flight and determine whether the command control system and the flight termination system are in the proper configuration and functioning properly immediately before flight. A flight termination system safety official shall provide real-time command control system support to the flight safety official during flight of a launch vehicle. The flight termination system safety official shall also coordinate with other flight safety system crewmembers in the development of mission rules, perform vehicle trajectory analysis, determine public protection lines and flight safety limits, and perform the flight safety system analyses required by § 417.329.

(l) *Flight termination system safety official qualifications.* In addition to the qualifications required by paragraph (b) of this section, a flight termination system safety official shall have the following knowledge, experience and training:

(1) A degree in engineering. A candidate flight termination system safety official may substitute equivalent technical experience and education in lieu of a degree.

(2) Technical education, training, and experience in electronics, including command transmitters, antennas, and receivers/decoders.

(3) Technical education, training, or experience in ordnance handling, ordnance safety, and effectiveness of ordnance devices.

(4) Experience as an observer of a fully qualified flight termination system official for at least two launches.

(5) Experience as a flight termination system safety official, under the supervision of a qualified flight termination system safety official, for at least one launch.

(m) *Flight safety analyst role.* A launch operator shall designate a flight safety analyst for each launch. This person shall analyze whether a launch vehicle requires a flight termination system, evaluate flight safety data, establish flight safety hazard areas, prepare a flight safety plan in accordance with § 415.115 of this chapter, develop flight commit criteria and flight termination rules, establish and display flight safety limits, perform public safety analyses, and develop flight safety system crew training scenarios in coordination with the senior flight safety official.

(n) *Flight safety analyst qualifications.* In addition to the qualifications required by paragraph (b) of this section, a flight safety analyst shall have the following knowledge, experience, and training:

(1) A degree in engineering, mathematics, physics or other scientific discipline with equivalent mathematics and physics requirements.

(2) Knowledge of orbital mechanics and aerodynamics.

(3) Training on all components that are involved in the calculation and production of the range safety displays and the calculation of probability of impact and expected casualties. This training shall include the interrelationships and sensitivity of the results to changes in each of the components.

(4) Experience as an observer and assistant to a qualified flight safety analyst on all the preparations for at least one launch.

(5) Experience as a flight safety analyst under the supervision of a qualified flight safety analyst, on all the preparations for at least two launches.

§§ 417.332–417.400 [Reserved]

Subpart E—Ground Safety

§ 417.401 Scope.

This subpart contains public safety requirements that apply to launch processing and post-launch operations at a launch site in the United States. The ground safety requirements in this subpart apply to all activities performed by, or on behalf of, a launch operator at a launch site in the United States. A licensed launch site operator must satisfy the requirements of part 420 of this chapter. Launch processing and post-launch operations at a launch site outside the United States may be subject to the requirements of the governing jurisdiction.

§ 417.403 General.

(a) *Public safety.* A launch operator shall ensure that all hazard controls are in place to protect the public from any and all hazards associated with its launch processing at a launch site in the United States.

(b) *Ground safety analysis.* A launch operator shall perform and document a ground safety analysis in accordance with § 417.405.

(c) *Ground safety plan.* A launch operator shall implement the ground safety plan it submitted during the license application process according to § 415.117 of this chapter and in accordance with the launch plan requirements of § 417.111 and § 415.119 of this chapter. A launch operator shall ensure that its ground safety plan is readily available to the FAA, including any FAA safety inspector at the launch site, and to personnel involved in operations at the launch site that could endanger the public. A launch operator shall keep current its ground safety plan for each launch and shall submit any change to the FAA no later than 15 days before the change is implemented. A launch operator shall submit any change that is material to public health and safety to the FAA for approval as a license modification in accordance with § 415.73 of this chapter. Any change that involves the addition of a hazard that could affect the public or the elimination of any previously identified hazard control for a hazard that still exists constitutes a material change.

(d) *Local agreements.* A launch operator shall coordinate and perform launch processing and flight of a launch vehicle in accordance with any local agreements that ensure that the responsibilities and requirements in this part and § 420.57 of this chapter are met. When a launch operator uses the launch site of a licensed launch site operator, the launch operator shall ensure that its own operations are conducted in accordance with any agreements that the launch site operator has with local authorities and that form a basis for the launch site operator's license.

(e) *Launch operator's exclusive use of a launch site.* For a launch that is to be conducted from a launch site exclusive to its own use, a launch operator shall satisfy the requirements of this subpart and applicable requirements of part 420 of this chapter, including the requirements contained in §§ 420.31 through 420.37 and subpart D of part 420.

§ 417.405 Ground safety analysis.

(a) A launch operator shall perform a ground safety analysis for all its launch vehicle hardware and launch processing at a launch site in the United States. This analysis must identify each potential public hazard, any and all associated causes, and any and all hazard controls that a launch operator will implement to keep each hazard from reaching the public. A launch operator's ground safety analysis must demonstrate whether its launch vehicle hardware and launch processing create public hazards. A launch operator shall incorporate any launch site operator's hardware systems and operations into a ground safety analysis where these items are involved in ensuring public safety for the launch operator's launch vehicle and launch processing.

(b) A ground safety analysis must be prepared by a technically competent person who oversees and integrates the sub-analyses performed by engineers or other technical personnel who are the most knowledgeable of each ground system and operation and any associated hazards. This individual shall possess each of the following qualifications:

(1) An engineering or other similar technical degree.

(2) At least 30 hours of training in the discipline of system safety.

(3) At least ten years of technical work experience, with at least five of those years involved in launch vehicle ground operations that provided a broad-based familiarity with ground processing safety hazards and the precautions needed to prevent mishaps.

(4) A background in reviewing complex technical documentation.

(5) The communication skills necessary to translate complex technical documentation into clear explanations and figures and to produce a ground safety analysis report.

(c) A launch operator shall ensure that personnel performing a ground safety analysis or preparing a ground safety analysis report have the support of the launch operator's entire organization and that any supporting documentation is maintained and available upon request.

(d) A launch operator shall begin a ground safety analysis by identifying all the systems and operations to be analyzed. A launch operator shall define the extent of each system and operation being assessed to ensure there is no miscommunication as to what the hazards are, and who, in the launch operator's organization or other organization supporting the launch, is responsible for controlling those hazards. A launch operator shall ensure that the ground safety analysis accounts for each launch vehicle system and operation involved in launch processing, even if only to show that no public hazard exists.

(e) A ground safety analysis need not account for potential hazards of a component if the launch operator demonstrates that no hazard to the public exists at the system level. A ground safety analysis need not account for an operation's individual task or subtask level if the launch operator demonstrates that no hazard to the public exists at the operation level. For any hazard that is confined within the boundaries of a launch operator's facility not to be a hazard to the public, the launch operator must provide verifiable controls that ensure the public will not have access to the associated hazard area while the hazard exists.

(f) A launch operator shall identify all hazards of each launch vehicle system and launch processing operation in accordance with the following:

(1) System hazards shall include explosives and other ordnance, solid and liquid propellants, and toxic and radioactive materials. Other system hazards include, but are not limited to, asphyxiants, cryogens, and high pressure. System hazards generally exist even when no operation is occurring.

(2) Operation hazards to be identified derive from an unsafe condition created by a system or operating environment or an unsafe act.

(3) All hazards, both credible and non-credible, shall be identified. The probability of occurrence is not relevant with respect to identifying a hazard.

(4) The ground safety analysis must provide a rationale for any assertion that no hazard exists for a particular system or operation.

(g) A launch operator shall categorize all hazards identified in accordance with the following:

(1) *Public hazard.* A launch operator shall treat any hazard that extends beyond the launch location under the control of the launch operator as a public hazard. Public hazards include, but need not be limited to:

(i) Blast overpressure and fragmentation resulting from an explosion.

(ii) Fire and deflagration, including of hazardous materials such as radioactive material, beryllium, carbon fibers, and propellants. When assessing systems containing such materials, a launch operator shall assume that in the event of a fire, hazardous smoke will reach the public.

(iii) Any sudden release of a hazardous material into the air, water, or ground.

(iv) Inadvertent ignition of a propulsive launch vehicle payload, stage, or motor.

(2) *Launch location hazard.* A hazard that extends beyond individuals doing the work, but stays within the confines of the location under the control of the launch operator. The confines may be bounded by a wall or a fence line of a facility or launch complex, or by a fenced or unfenced boundary of an entire industrial complex or multi-user launch site. A launch location hazard may effect the public depending on public access controls. Launch location hazards that may effect the public include, but are not limited to, the hazards listed in paragraphs (g)(1)(i) through (iv) of this section and additional hazards in potentially unsafe locations accessible to the public such as:

(i) Unguarded electrical circuits or machinery.

(ii) Oxygen deficient environments.

(iii) Falling objects.

(iv) Potential falls into unguarded pits or from unguarded elevated work platforms.

(v) Sources of high ionizing and non-ionizing radiation such as x-rays, radio transmitters, and lasers.

(3) *Employee hazard.* A hazard only to individuals performing the launch operator's work and not a hazard to other people in the area. A launch operator is responsible for employee safety in accordance with other federal and local regulations. For any hazard determined to be an employee hazard, a launch operator's ground safety analysis must identify the hazard and demonstrate that there are no associated public safety issues.

(4) *Non-credible hazard.* A hazard for which any possible adverse effect on

people or property would be negligible and where the possibility of any adverse effect on people or property is remote. For any hazard determined to be non-credible, a launch operator's ground safety analysis must identify the hazard and demonstrate that it is non-credible.

(h) For each public hazard and launch location hazard, a ground safety analysis must identify all hazard causes. The analysis must account for conditions or acts or any chain of events that could result in a hazard. The analysis must account for the possible failure of any control or monitoring circuitry within hardware systems that could cause a hazard.

(i) A ground safety analysis must identify the controls to be implemented by a launch operator for each hazard cause identified in accordance with paragraph (h) of this section. A launch operator's hazard controls shall include, but need not be limited to the use of engineering controls for the containment of hazards within defined areas and the control of public access to those areas.

(j) All hazard controls selected by a launch operator must be verifiable in accordance with § 415.117(b)(3) of this chapter. If a hazard control is not verifiable, a launch operator may include it as an informational note on the hazard analysis form, if a verifiable control is also listed.

(k) A licensee shall ensure the continuing accuracy of its ground safety analysis in accordance with the requirements of this paragraph. A launch operator shall document the results of its ground safety analysis in a ground safety analysis report as required during the license application process in accordance with § 415.117 and appendix B to part 415 of this chapter. The analysis of ground systems and operations shall not end upon submission of a ground safety analysis report to the FAA during the license application process.

(1) A licensee shall ensure that any new or modified system or operation is analyzed for potential hazards that could effect the public. A licensee shall also ensure that each existing system and operation is subject to continual scrutiny and that the information in a ground safety analysis report is kept current.

(2) A licensee shall submit any ground safety analysis report update or change to the FAA as soon as the need for the change is identified and at least 30 days before any associated activity is to take place. Any change that involves the addition of a hazard that could effect the public or the elimination of any previously identified hazard control for a hazard that still exists, shall be submitted to the FAA for approval as a license modification.

§ 417.407 Hazard control implementation.

(a) *General.* A launch operator shall implement the hazard controls identified by its ground safety analysis. System hazard controls must be implemented in accordance with § 417.409. Safety clear zones for hazardous operations must be implemented in accordance with § 417.411. Hazard areas and controls for allowing any public access must be implemented in accordance with § 417.413. Hazard controls after launch or an attempt to launch must be implemented in accordance with § 417.415. Controls for propellant and explosive hazards shall be implemented in accordance with § 417.417.

(b) *Hazard control verification.* A launch operator shall implement a hazard tracking process to ensure that each hazard has a verifiable hazard control. Verification status shall remain "open" for an individual hazard control until the hazard control is verified to exist in a released drawing, report, procedure or similar document.

(c) *Hazard control configuration control.* A launch operator shall institute a configuration control process for safety critical hardware and procedural steps to ensure that verified hazard controls and their associated documentation cannot be changed without coordination with the launch safety director.

(d) *Inspections.* When a hazard exists, a launch operator shall conduct daily inspections of all related hardware, software, and facilities to ensure that all safety devices and other hazard controls are in place for that hazard, and that all hazardous and safety critical hardware and software is in working order and that no unsafe conditions exist.

(e) *Procedures.* Each launch processing operation involving a public hazard or a launch location hazard must be conducted in accordance with written procedures that incorporate the hazard controls identified by the launch operator's ground safety analysis and as required by this subpart. The launch operator's launch safety director must approve such procedures. A launch operator shall maintain an "as-run" copy of these procedures, which includes any changes and provides historical documentation of start and stop dates and times that the procedure was run and any observations made during the operation.

(f) *Hazardous materials.* A launch operator shall implement procedures for the receipt, storage, handling, use, and disposal of hazardous materials, including toxic substances and any sources of ionizing radiation. A launch operator shall implement procedures for responding to hazardous material emergencies and protecting the public in accordance with its emergency response plan submitted through the licensing process according to § 415.119(b) of this chapter. These procedures must include identification of each hazard and its effects, actions to be taken in response to release of a hazardous material, identification of protective gear and other safety equipment that must be available in order to respond to a release, evacuation and rescue procedures, chain of command, communication both on-site and off-site to surrounding communities and local authorities. A launch operator shall perform a toxic release hazard analysis for any launch processing performed at the launch site in accordance with appendix I of this part. A launch operator shall apply toxic plume modeling techniques in accordance with appendix I and ensure that notifications and evacuations are accomplished to protect the public from any potential toxic release.

§ 417.409 System hazard controls.

(a) *General.* For each system that presents a public hazard, a launch operator shall implement hazard controls as identified by its ground safety analysis and in accordance with the requirements of this section.

(1) A system must be no less than single fault tolerant to creating a public hazard unless other hazard control criteria are specified for the system by the requirements of this part, such as the requirements for structures and material handling equipment contained in paragraph (b) of this section. A system capable of creating a catastrophic public hazard, such as a liquid or solid stage inadvertently going propulsive or a release of a toxic substance that could reach the public, shall be no less than dual fault tolerant. Dual fault tolerance includes, but need not be limited to, switches, valves or similar components that prevent an unwanted transfer or release of energy or hazardous materials.

(2) Each hazard control used to provide fault tolerance must be independent from any other hazard control so that no single action or event can remove more than one inhibit. A launch operator must prevent inadvertent actuation of actuation devices such as switches and valves.

(3) If a safety device or other item must function in order to control a public safety hazard, at least two fully

redundant items shall be provided. No single action or event shall be capable of disabling both items.

(4) Any computing systems and software used to control a public hazard must satisfy the requirements of § 417.123 and appendix H of this part.

(b) *Structures and material handling equipment.* Any safety factor applied in the design of a structure or material handling equipment must account for static and dynamic loads, environmental stresses and expected wear. A launch operator shall inspect structures and material handling equipment to verify workmanship and proper operations and maintenance. A launch operator shall assess its structures and material handling equipment for potential single point failures that could endanger the public. Single point failures shall be eliminated or subject to specific inspection and testing that ensures proper operation. All single point failure welds must undergo both surface and volumetric inspection to verify no critical flaws. If, due to the geometry of a weld, a meaningful volumetric inspection cannot be performed, a launch operator shall implement other inspection techniques. In such a case, the launch operator shall demonstrate, clearly and convincingly, through the licensing process that its inspection processes accurately verifies the absence of any critical flaw.

(c) *Pressure vessels and pressurized systems.* A launch operator shall apply the following hazard controls to any flight or ground pressure vessel, component, or system that will be pressurized during launch processing and whose failure, during launch processing, could endanger the public:

(1) A pressure vessel, component, or system must be tested upon installation and before being placed into service, and periodically inspected to ensure that no critical flaw exists.

(2) Any safety factor applied in the design of a pressure vessel, component, or system must account for static and dynamic loads, environmental stresses and expected wear.

(3) Except for pressure relief and emergency venting, pressurized system flow-paths must be single fault tolerant to causing pressure ruptures and material releases that could endanger the public during launch processing.

(4) Pressure relief and emergency venting capability must be provided to protect against pressure ruptures that could endanger the public. Pressure relief devices shall be sized to provide the flow rate necessary to prevent a rupture in the event a pressure vessel is exposed to fire.

(d) *Electrical and mechanical systems.* A launch operator shall apply the following hazard controls to any electrical or mechanical system that could release electrical or mechanical energy that could endanger the public during launch processing:

(1) Electrical and mechanical systems must be single fault tolerant to providing or releasing electrical or mechanical energy that could endanger the public. This requirement includes systems that generate ionizing or non-ionizing radiation.

(2) Electrical systems and equipment used in areas where a flammable material may exist must be hermetically sealed, explosion proof, intrinsically safe, purged or otherwise designed so as not to provide an ignition source. A launch operator shall assess each electrical system as a possible source of thermal energy and ensure that the electrical system could not act as an ignition source.

(3) A launch operator shall prevent unintentionally conducted or radiated energy due to possible bent pins in a connector, a mismated connector, shorted wires, or unshielded wires within electrical power and signal circuits that interface with hazardous subsystems.

(e) *Propulsion systems.* A propulsion system must be dual fault tolerant to inadvertently becoming propulsive. Propulsion systems must be single fault tolerant to inadvertent mixing of fuel and oxidizer. Each material in a propulsion system must be compatible with any other material that it may come into contact with during launch processing. This includes any material used to assemble and clean the system. Different sized fittings shall be used to prevent connecting incompatible systems. Hazard controls applicable to propellants and explosives are provided in § 417.417.

(f) *Ordnance systems.* An ordnance system must be at least single fault tolerant to prevent inadvertent actuation if the public could be reached. Hazard controls applicable to ordnance are provided in § 417.417. In addition, an ordnance system must satisfy the following requirements:

(1) All ordnance and electrical connections shall be kept disconnected until final preparations for flight.

(2) An ordnance system must provide for safing and arming of all ordnance. An electrically initiated ordnance system must include ordnance initiation devices or arming devices, also referred to as safe and arm devices, that provide a removable and replaceable mechanical barrier or other positive means of interrupting power to each ordnance firing circuit to prevent inadvertent initiation of ordnance. A mechanical safe and arm device must have a safing pin that locks the mechanical barrier in a safe position. A mechanical actuated ordnance device must also have a safing pin that prevents mechanical movement within the device. Specific safing and arming requirements for a flight termination system are provided in § 417.313.

(3) An ordnance system must be protected from stray energy through grounding, bonding, or shielding.

(4) Any monitoring or test circuitry that interfaces with an ordnance system must be current limited to protect against inadvertent initiation of ordnance. Equipment used to measure bridgewire resistance on electro-explosive devices must be special purpose ordnance system instrumentation with features that limit current.

§ 417.411 Safety clear zones for hazardous operations.

(a) For each operation involving a potential launch location hazard or public hazard, a launch operator shall define a safety clear zone within which any potential adverse effects of the hazard will be confined. A launch operator may employ a risk analysis to define a safety clear zone if, through the licensing process, the launch operator demonstrates clearly and convincingly an equivalent level of safety. A launch operator's safety clear zones must satisfy the following:

(1) A launch operator shall establish a safety clear zone that accounts for the potential blast, fragment, fire or heat, toxic and other hazardous energy or material potential of the associated systems and operations.

(2) Any time a launch vehicle is in a launch commandable configuration, the flight safety system shall be fully operational, on internal power, with the associated safety clear zone in effect and cleared.

(3) A safety clear zone for a possible explosive event shall be based on the worst case possible event, regardless of the fault tolerance of the system.

(4) A safety clear zone for a possible toxic event shall be based on the worst case credible event. A launch operator shall have procedures in place, in a stand-by condition, so as to maintain public safety in the event toxic releases reach beyond the safety clear zone.

(5) A safety clear zone for a material handling operation shall be based on a worst case credible event for that operation, such as failure of a component in the lifting device while lifting a fueled spacecraft.

(b) A launch operator shall implement restrictions that prohibit public access to any safety clear zone during the hazardous operation. A safety clear zone may extend to areas beyond the launch location boundaries if local agreements provide for restricting public access to such areas and the launch operator verifies that the safety clear zone is clear of any public during the hazardous operation.

(c) A launch operator's procedures shall verify that the public is outside of a safety clear zone prior to the launch operator beginning the hazardous operation.

(d) A launch operator shall control a safety clear zone to ensure no public access during the associated operation. This may include the use of security guards and equipment, physical barriers, and warning signs and other types of warning devices.

§ 417.413 Hazard areas.

(a) *General.* For each hardware system that presents a public hazard or launch location hazard, a launch operator shall define a hazard area within which any adverse effects will be confined should an actuation or other hazardous event occur. Whenever a hazard is present, a launch operator shall prohibit public access to any hazard area unless the requirements for public access of paragraph (b) of this section are met.

(b) *Public access.* If visitors or other members of the public, such as individuals providing goods or services not related to the launch processing or flight of a launch vehicle, must have access to a launch operator's facility or launch location, a launch operator shall implement a process for authorizing public access on an individual basis. This process must ensure that each member of the public is briefed on all hazards within the facility and any related safety warnings, procedures, or rules that provide protection, or the launch operator shall ensure that each individual is accompanied at all times by a fully knowledgeable escort.

(c) *Hazard controls during public access.* A launch operator shall implement procedural controls that preclude any hazardous operation from taking place while members of the public have access to the launch location and that system hazard controls are in place that preclude initiation of a hazardous event. Hazard controls that preclude initiation of a hazardous event include, but need not be limited to, the following:

(1) Lockout devices or other restraints must be used on system actuation switches or other controls to eliminate the possibility of inadvertent actuation of a hazardous system.

(2) Ordnance systems must be physically disconnected from any power source, incorporate the use of safing plugs, or have safety devices in place that preclude inadvertent initiation. If the safety devices are electrically actuated, no activity involving the control circuitry for those safety devices shall be ongoing while the public has access to the hazard area. All safing pins on safe and arm devices and mechanically actuated devices must be installed. All explosive transfer lines, not protected by a safe and arm device or mechanically actuated device or equivalent, must be physically disconnected.

(3) When systems or tanks are loaded with hypergols or other toxic materials, the system or tank must be closed and verified to be leak-tight with two verifiable closures, such as a valve and a cap, to every external flow path or fitting. Such a system must also be in a steady-state condition. A launch operator shall also visually inspect a propellant system to check for potential leak sources and problems.

(4) Any pressurized system must not be above its maximum allowable working pressure or be in a dynamic state. If a pressurized system has valves that are electrically actuated, no activity involving this circuitry shall be ongoing while the public has access to the associated hazard area. Any launch vehicle system shall not be pressurized to more than 25% of its design burst pressure, when the public has access to the associated hazard area.

(5) Any sources of ionizing or non-ionizing radiation, such as, x-rays, nuclear power sources, high-energy radio transmitters and radar and lasers must not be present or must be verified to be inactive when the public has access to the associated hazard area.

(6) Any physical hazards must be guarded to prevent potential physical injury to any visiting member of the public. Physical hazards include, but need not be limited to potential falling objects, personnel falls from an elevated position, and protection from potentially hazardous vents, such as pressure relief discharge vents.

(7) Any safety device or safety critical system must be maintained and verified to be operating properly prior to permitting public access.

§ 417.415 Post-launch and post-flight-attempt hazard controls.

(a) A launch operator shall implement procedures for controlling hazards and returning the launch facility to a safe condition after a successful launch. Procedural hazard controls must include, but need not be limited to, provisions for extinguishing any fires and re-establishing full operational capability of all safety devices, barriers and platforms, and access control.

(b) A launch operator shall implement procedures for controlling hazards associated with a failed flight attempt where a solid or liquid launch vehicle engine start command was sent, but the launch vehicle did not liftoff. These procedures must include, but need not be limited to, the following:

(1) Maintaining and verifying that any flight termination system remains operational until it is verified that the launch vehicle does not represent a risk of inadvertent liftoff. If an ignition signal has been sent to a solid rocket motor, there must be a waiting period of no less than 30 minutes during which the flight termination system must remain armed and active. During this time flight termination system batteries must maintain sufficient voltage and current capacity for flight termination system operation and the flight termination system receivers must remain captured by the command control system transmitter's carrier signal.

(2) Assuring that the vehicle is in a safe configuration, including its propulsion and ordnance systems. The flight safety system crew shall have access to the vehicle status. Safety devices shall be re-established and any pressurized systems shall be brought down to safe pressure levels.

(3) Prohibiting launch complex entry until a pad safing team has performed all necessary safing tasks.

(c) A launch operator shall implement procedural controls for hazards associated with an unsuccessful flight where the launch vehicle has a land or water impact. These procedures must include, but need not be limited to the following:

(1) Provisions for extinguishing any fires.

(2) Provisions for evacuation and rescue of members of the public, to include modeling the dispersion and movement of any toxic plume, identification of areas at risk, and communication with local government authorities.

(3) Provisions to secure impact areas to ensure that all personnel are evacuated, that no unauthorized personnel enter, and to preserve evidence.

(4) Provisions for ensuring public safety from any hazardous debris, such as plans for recovery and salvage of launch vehicle debris and safe disposal of any hazardous materials.

§ 417.417 Propellants and explosives.

(a) A launch operator shall comply with the explosive safety criteria in 14 CFR part 420.

(b) A launch operator shall ensure compliance with the explosive site plan developed in accordance with 14 CFR part 420 by ensuring that:

(1) Only those explosive facilities and launch points addressed in the explosive site plan are used and only for their intended purpose.

(2) The total net explosive weight for each explosive hazard facility and launch point must not exceed the maximum net explosive weight limit indicated on the explosive site plan for each location.

(c) A launch operator shall implement procedures that ensure public safety for the receipt, storage, handling, inspection, test, and disposal of explosives.

(d) A launch operator shall implement procedural system controls to preclude inadvertent initiation of propellants and explosives. These controls shall include, but need not be limited to, the following:

(1) Ordnance systems must be protected from stray energy through methods of bonding, grounding, and shielding, and by controlling radio frequency radiation sources in a radio frequency radiation exclusion area. A launch operator shall determine the vulnerability of its electro-explosive devices and systems to radio frequency radiation and establish radio frequency radiation power limits or radio frequency radiation exclusion areas as required by the launch site operator or as needed to ensure safety.

(2) Ordnance safety devices, as described in § 417.409, must remain in place until the launch complex is cleared as part of the final launch countdown. No members of the public shall be allowed back onto the complex until all safety devices are re-established.

(3) Heat and spark or flame producing devices must not be allowed in an explosive or propellant facility without written approval and oversight, such as obtaining a hot work permit, from a launch operator's launch safety organization.

(4) Static producing materials must not be allowed in close proximity to solid or liquid propellants, electro-explosive devices or systems containing flammable liquids.

(5) Fire safety measures shall be used to preclude inadvertent initiation of propellants and explosives including, but not limited to, the elimination or reduction of flammable and combustible materials, elimination or reduction of ignition sources, fire and smoke detection systems, safe means of egress and timely fire suppression response.

(6) A facility used to store or process explosives must include lightning protection to prevent inadvertent initiation of propellants and explosives due to lightning.

(7) In the event of an emergency, a launch operator shall implement its emergency response plan, developed in accordance with § 415.119(b) of this chapter and updated in accordance with § 417.111, to provide for the control of any propellant or explosive hazards.

§§ 417.418–417.500 [Reserved]

Appendix A to Part 417—Methodologies for Determining Hazard Areas for Orbital Launch

A417.1 General

This appendix provides methodologies and equations for use in determining the hazard areas and public risk factors as part of the flight hazard area analyses required by § 417.225. A launch operator shall use the methodologies and equations provided in this appendix when performing the analyses unless a launch operator provides a clear and convincing demonstration that an alternative provides an equivalent level of safety.

A417.3 Blast Hazard Area

(a) *General.* A launch operator shall use the following equations and methodologies when determining a blast hazard area as required by § 417.225.

(b) *Input.* To determine the blast hazard area associated with any potential explosive hazard, a launch operator shall identify the weight and the TNT equivalency coefficient (C) of each explosive source for use as input to the analysis calculations.

(c) *Methodology.* For each explosive hazard, a launch operator shall calculate a blast hazard area for an overpressure of 3.0 pounds per square inch defined by a radius R_{op} around the location of the explosive source using the following equations:

$$R_{op} = 20.3 \cdot (NEW)^{1/3}$$

Where:

R_{op} is the over pressure distance in feet.
$NEW = W_E \cdot C$ (pounds).
W_E is the weight of the explosive in pounds.
C is the TNT equivalency coefficient of the propellant being evaluated. A launch operator shall identify the TNT equivalency of each propellant on its launch vehicle including any payload. TNT equivalency data for common liquid propellants is provided in tables A417–1. Table A417–2 provides factors for converting gallons of specified liquid propellants to pounds.

A417.5 Ship-Hit Contours in the Flight Hazard Area

(a) *General.* A launch operator shall use the equations and methodologies contained in this section when determining ship hazard areas, referred to as ship-hit contours, as required by § 417.225(g).

(b) *Input.* A launch operator's hazard area analysis must account for the following input data when determining ship-hit contours:

(1) The debris class mean impact points and standard deviations (sigma) of the impact dispersions for each simulated launch vehicle failure for increasing trajectory times (T) from liftoff until the instantaneous impact point reaches a downrange distance such that the ship hit probability becomes less than 1×10^{-5}. A launch operator shall determine debris impacts and dispersions in accordance with § 417.225(a)(3). The debris impact dispersions must account for the variance in ballistic coefficient for each debris class, winds, variance in velocity resulting from vehicle breakup, and tumble turn and guidance errors. When determining a ship-hit contour, the launch operator need not account for debris with a ballistic coefficient of less than three. A launch operator shall ensure that a ship-hit contour consists of curves that are smooth and continuous. This shall be accomplished by varying the time interval (Δt), between the trajectory times assessed such that each debris impact point location change, between time intervals, is less than one-half sigma of the downrange dispersion distance.

(2) The probability of failure of each launch vehicle stage and the probability of existence of each debris class which must account for break up through aerodynamic breakup or a flight termination action and the different debris that would result from each type of break up. Any planned debris impact, such as a stage or payload fairing impact, shall be accounted for as a debris class with a probability of existence equal to the probability of success for the planned debris impact.

(3) The size of the largest ship that could be located in the flight hazard area, or, where the ship size is unknown, a launch operator shall use a ship size of 600 feet long by 200 feet wide. A launch operator may use a ship size less than 600 feet long by 200 feet wide, if the launch operator demonstrates clearly and convincingly through the licensing process that its proposed ship size represents the largest ship that could be present in the flight hazard area.

(c) *Ship surveillance in the flight hazard area.* A launch operator shall use statistical ship density data to determine the need to survey ships in the flight hazard area during the launch countdown. A launch operator need not survey for ships if the launch operator demonstrates, using statistical ship density data, that the collective probability of hitting any ship is less than or equal to 1×10^{-5}. A launch operator shall determine whether ship surveillance in the flight hazard area is required for a launch in accordance with the following:

(1) A launch operator shall determine ship density for the flight hazard area based on the most recent statistical data from maritime reports, satellite analysis, or U.S. government information. The ship density for the flight hazard area must account for time of day and any other factors that might affect the ship density. The statistical ship density for the flight hazard area must be multiplied by a safety factor of 10 for use in the collective ship-hit probability analysis unless the

launch operator demonstrates the accuracy of its ship density data, clearly and convincingly through the licensing process, and accounts for the associated ship density error in the collective ship-hit probability analysis.

(2) A launch operator shall use the methodology contained in paragraph (d) of this section to determine a ship-hit contour for 10 ships where the probability of hitting any one of the 10 ships located on the contour is less than or equal to 1×10^{-5}.

(3) A launch operator shall compute the expected number of ships inside the 10-ship contour determined according to paragraph (c)(2) of this section by determining the total water surface area within the 10-ship contour and multiplying this area by the ship density determined according to paragraph (c)(1) of this section. If the resulting number of ships is less than 10, ship surveillance in the flight hazard area is not required and the launch operator need only determine the ship hazard area for notice to mariners according to paragraph (e) of this section. If the resulting number of ships is equal to or greater than 10, ship surveillance in the flight hazard area is required and the launch operator shall determine the ship-hit contours according to paragraph (d) of this section.

(d) *Methodology for determining ship-hit contours in the flight hazard area.* A launch operator shall use the methodology contained in this paragraph to determine ship-hit contours as required by § 417.225. Each ship-hit contour shall be designated by a number N_S, which equals the number of ships (1 through 10) represented by the contour. Each contour must define the area where if N_S ships were located on the contour, the probability of debris impacting a ship during launch vehicle flight would be less than or equal to 1×10^{-5}. A launch operator shall determine a ship-hit contour for each NS by evaluating each T + Δt trajectory time step and computing the ship-hit probability for N_S ship(s) assumed to be located at grid points of increasing crossrange distance from the nominal instantaneous impact point trace in accordance with the following:

(1) A launch operator shall establish a grid of ship location points separated by no more than 1000 feet in both the downrange direction and the crossrange direction. Figure A417–1 illustrates a grid of ship location points and sample debris impact points for three debris classes labeled 1, 2, and 3. To determine an N_S ship-hit contour, a launch operator shall compute the hit probability for N_S ships located at each ship location grid point due to each potential debris impact for each trajectory time T, and sum the hit probabilities for each ship location grid point over all trajectory times, assuming a probability of each impact occurring that is applicable to each trajectory time.

(2) If the debris dispersion for a debris class has equal values for left and right crossrange, or uprange and down range, the launch operator need only perform calculations in one elliptical quadrant and then may assume that the ship-hit probability is symmetrical in the other quadrant and multiply the probability result for the calculated quadrant by the number of symmetrical quadrants.

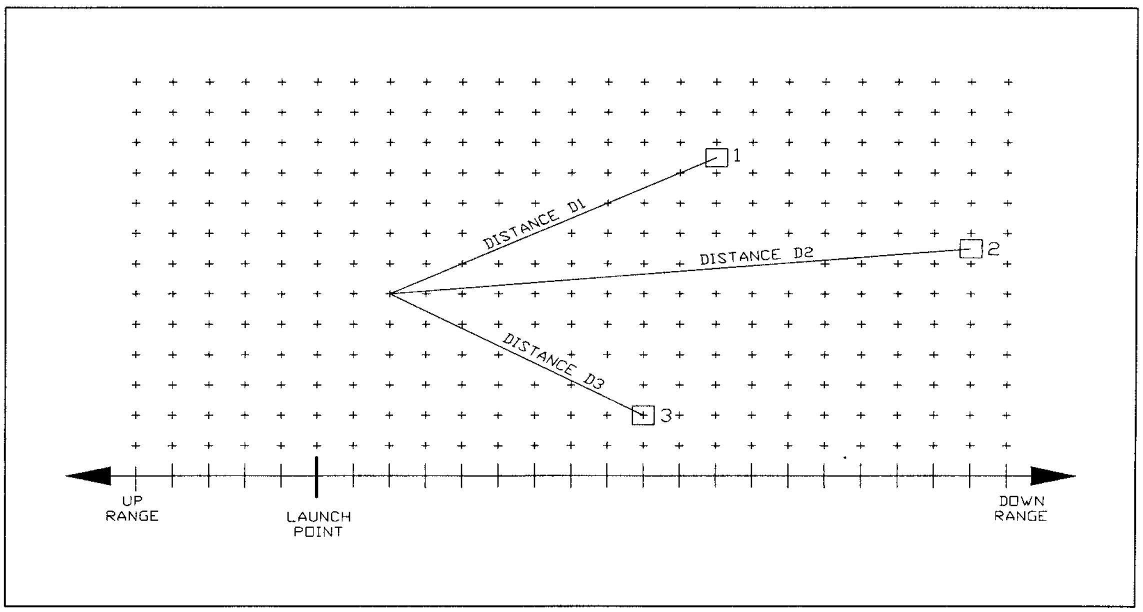


Figure A417-1, Illustration of a Grid of Ship Location Points and Debris Impact Points.

(3) Figure A417–2 illustrates a ship location point, labeled ''1'', with four debris impact points, surrounded by their dispersions, for a given trajectory time of T. A launch operator shall use the following sequence of steps to evaluate each such ship location point when determining a ship-hit contour:

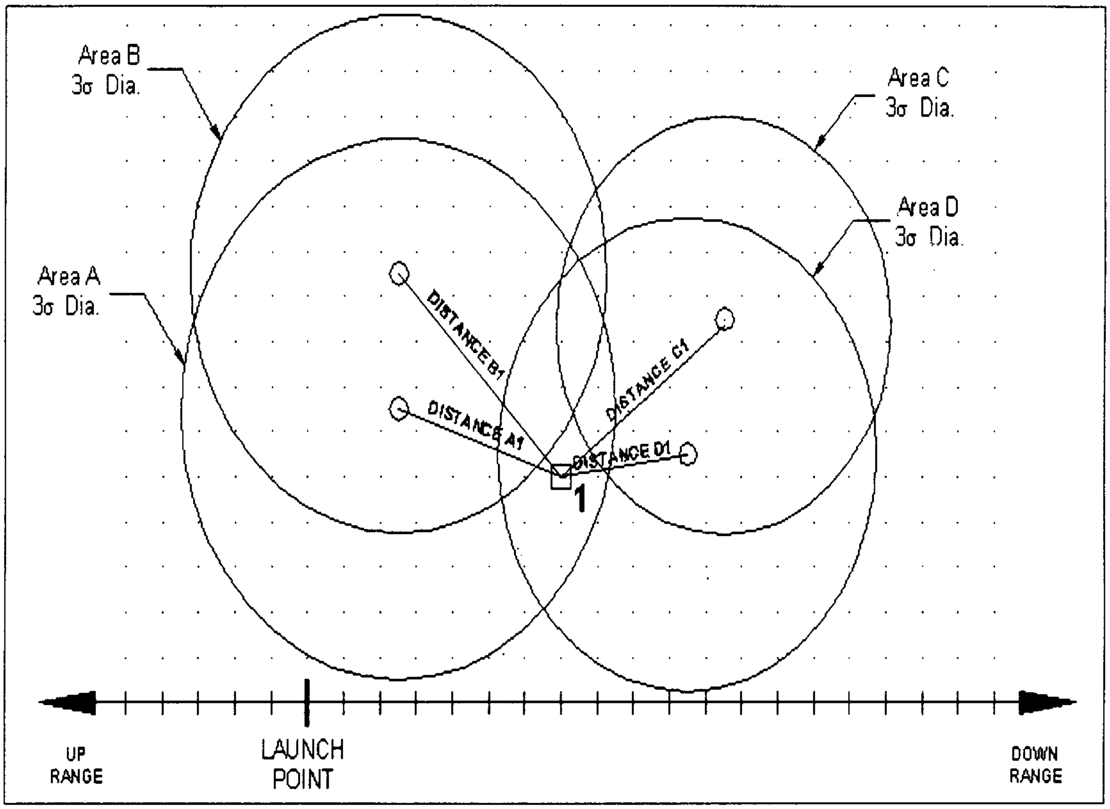


Figure A417-2, Illustration of a Ship Location Point and Debris Impact Dispersions

(i) For each ship location point that is within the four-sigma distribution of any debris impact, compute the probability of hitting a ship, P_S, for each debris class using the following equations:

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2}$$

Where:

F_D is the probability density function.

D is the distance from the mean impact point of the debris class to the ship location grid point during the time interval (see Figure A417–2). It is only necessary to evaluate those debris impacts for which

$$\frac{D}{\sigma}$$

is less than 4.

σ is the standard deviation of the debris class impact dispersion.

$$P_{c(A,B,---N)} = P_{E(A,B,---N)} \times F_{D(A,B,---N)} \times A$$

Where:

$P_{C\ (A,B,---N)}$ is the conditional hit probability for each debris class (A,B,---N) during the Δt time interval.

$P_{E\ (A,B,---N)}$ is the probability of existence for each debris class (A,B,---N) during the Δt time interval.

$F_{D\ (A,B,---N)}$ is the probability density function determined for each debris class (A,B,---N) during the Δt time interval.

A is the total area of the N_S ships.

$$P_{GT} = P_F\left[1-\left(1-P_{CA}\right)^{NA}\left(1-P_{CB}\right)^{NB}\ldots\left(1-P_{CN}\right)^{NN}\right]$$

Where:

$N_{A,B,--N}$ are the number of debris pieces in each debris class.

P_F is the probability of failure during the Δt time interval.

P_{GT} is the ship-hit probability for each ship location grid point at each Δt time interval.

P_{GT} is then summed over all time intervals to obtain P_S:

$$P_s = \sum P_{GT}$$

Where:

P_S is the total ship-hit probability for the ship location grid point, summed over all time intervals and for all debris pieces.

P_{GT} is the ship-hit probability for each ship location grid point, for a specific trajectory time interval for which a failure probability is established.

(ii) Compute P_S as a running total for each grid point from lift-off until the P_S, computed in step (i) for a grid point located directly on the nominal instantaneous impact point trace, is equal to or less than 1×100^{-5} and all debris impact points reach a distance greater than four sigma from this impact point. This downrange distance represents the end of the N_s ship-hit contour.

(iii) Once a launch operator determines the end of a ship-hit contour on the nominal instantaneous impact point trace, the launch operator shall define the crossrange distance for each time step along the nominal trajectory where the ship-hit probability is equal to or less than 1×10^{-5}. A launch operator may refine this distance by linearly interpolating the log of P_S between ship location grid points, such as $\log_{10}(P_S)$. The ship-hit contour for N_S ships shall be determined by drawing straight line segments connecting the ship location points where P_S is equal to or less than 1×10^{-5}. The area enclosed by the ship-hit contour represents the ship hazard area for N_S ships.

(iv) Repeat steps (i) through (iii) to determine each N_S ship-hit contour as required by § 417.225(g)(1).

(e) *Ship hazard area for notice to mariners.* Regardless of whether ship surveillance is required according to paragraph (c) of this section, a launch operator shall determine a ship hazard area for providing notice to mariners as the ship-hit contour for 10 ships determined according to paragraph (d) of this section. A launch operator shall ensure that a notice of this ship hazard area is disseminated in accordance with § 417.121(e).

A417.7 Individual Casualty Contour

(a) *General.* For land overflight, an individual casualty contour must encompass the area where the individual casualty probability (P_C) criteria of 1×10^{-6} established in § 417.107(b) would be exceeded if one person were assumed to be in the open, inside the contour, during launch vehicle flight. A launch operator shall use the equations and methodologies provided in this section to define an individual casualty contour as required by § 417.225(d).

(b) *Input.* A launch operator shall use the following input data when determining an individual casualty contour:

(1) The standard deviation of the impact debris dispersions for each debris class produced by all launch vehicle failures assessed every t + Δt interval from launch until the individual risk, P_C, associated with that launch becomes less than 1×10^{-6}. A launch operator shall determine debris impacts and dispersions in accordance with § 417.225(a)(3). When determining an individual casualty contour, a launch operator need not account for debris with a ballistic coefficient of less than three. A launch operator shall ensure that an individual casualty contour consists of curves that are smooth and continuous. This shall be accomplished by varying the time interval (Δt) between the trajectory times assessed such that each debris impact point location change, between time intervals, is less than one-half sigma of the downrange dispersion distance.

(2) The probability of failure of each launch vehicle stage.

(3) The probability of existence of each debris class.

(c) *Methodology for determining individual risk for debris impacts.* A launch operator shall use the following methodology for determining individual risk and an individual casualty contour:

(1) A launch operator shall establish a grid of personnel location points that are no more than 1000 feet apart in the downrange direction and no more than 1000 feet apart in the crossrange direction (see figure A417–1). For each t + Δt time interval starting at first stage ignition, the probability of casualty (P_C) shall be computed assuming a person is in the open and is located at grid points of increasing crossrange distance from the nominal instantaneous impact point trace. As instantaneous impact point rates increase and the debris impact points become more dispersed, the delta time shall decrease inversely as a function of the instantaneous impact point rate. At each grid point, the probability of each type of vehicle failure will be evaluated according to its probability of occurrence at that time point. A launch operator shall compute P_C for each grid point and sum the probabilities of casualty for that grid point over all flight times for grid points of increasing crossrange distance from the nominal instantaneous impact point trace until PC is less than or equal to 1×10^{-6} for all debris classes where the grid point is within the four-sigma impact dispersion of the debris class using the following equation:

$$P_C = \sum_{t=0}^{t=T} P_{G_{(t)}}$$

Where:

P_C is the total probability of casualty, summed over all times and for all pieces, for one person in the open located at a grid point.

$P_{G(t)}$ is the probability of casualty for one person in the open located at a grid point for all launch vehicle failures during a specific time interval.

(2) A launch operator shall use the methodology in paragraph (d) of this section to compute $P_{G_{(t)}}$ for inert debris impact locations.

(3) A launch operator shall use the methodology in paragraph (e) of this section to compute $P_{G_{(t)}}$ for explosive or other types of hazardous debris for which the size of the casualty area is greater than 0.5 sigma of the debris impact dispersion. If the casualty area is less than or equal to 0.5 sigma of the debris impact dispersion, the launch operator may use the methodology in paragraph (d) of this section to compute $P_{G_{(t)}}$.

(4) When several hazardous debris pieces exist in a debris class, a launch operator shall use a standard statistical procedure for combining the probability of casualty for each debris piece to determine the probability of casualty for the mean debris piece of the debris class in accordance with the following equation:

$$p_c(\text{class}) = 1 - \left[1 - p(\text{component})\right]^{N_c P_E}$$

Where:

P_C is the probability of casualty for debris class C.

N_C is the number of components in debris class C.

P_E is the probability that the hazard will exist upon impact for each component in debris class C (for example the probability that an explosive debris piece will explode upon impact.

(5) A launch operator shall use the methodology and equations in this paragraph when combining probability of casualty of different debris classes or debris types such as inert and explosive hazards, to obtain the total probability of casualty. Additionally, if hazards such as explosive components do not produced an explosive hazard area (propellant pieces have a probability of explosion as a function of the impact velocity), their impact would be treated in the same manner as inert pieces and the following equation still applies, since the number of pieces would explode on impact and the number that would not always sum to N_C. If, for example, there are N_C components in the Cth hazardous debris class and P_E is the probability that the hazard will exists upon impact for each component, the probability of casualty for one or more classes may be approximated using the following equations:

$$P_{G_{(t)}} = P_F \cdot \left[1 - \left(1 - P_{C_A}\right)^{N_A P_E}\left(1 - P_{C_B}\right)^{N_B P_E} \ldots \left(1 - P_{C_N}\right)^{N_N P_E}\right]$$

Where:

$N_{A,B-N}$ are the number of debris pieces in each debris class.

P_F is the probability of vehicle failure during the time interval Δt, at time t,

P_E is the probability of existence for each debris class during the Δt,

$P_{G(t)}$ is the probability of casualty for each grid point for a time interval.

$$P_C = \sum_{t=0}^{t=T} P_{G(t)}$$

(6) A launch operator shall compute P_C as a running total summation of each time interval and for each grid point from launch until the total probability of casualty for a grid point located on the nominal instantaneous impact point is less than 1×10^{-6} and any further debris impacts are greater than four sigma from this grid point. The resulting downrange position represents the end of the individual casualty contour.

(7) Once the end of the individual casualty contour is determined, a launch operator shall determine all cross range distances to the grid points at which the probability of casualty is less than 1×10^{-6}. A launch operator may refine this distance by linearly interpolating the log of P_C between grid points (i.e. $\log_{10})P_C$. The individual casualty contour shall be determined by drawing strait line segments connecting the personal location grid points where P_C is equal to or less than 1×10^{-6}. The area enclosed by the individual casualty contour represents the individual casualty hazard area.

(d) *Methodology for determining individual risk for inert debris impacts.* A launch operator shall use the following sequence of calculations to determine the probability of casualty for each personnel location grid point for an inert debris impact for an inert debris class as required in paragraph (c)(2) of this section:

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2}$$

Where:

D is the distance from the impact point of the debris class to the grid point (see figure A417–2). Calculations are only necessary for cases in which

$$\frac{D}{\sigma}$$

is less than 4.0.

σ is the circular normal standard deviation of the debris class impact dispersion. F_D is the probability density function.

$$P_{C_{A,B,-N}} = F_D \cdot A_C$$

Where:

A_C is the casualty area for the debris class.

P_C is the probability of casualty for the inert debris class (A, B–N).

(e) *Methodology for determining individual risk for explosive or other hazardous debris impacts.* This paragraph contains the methodology for computing the probability of casualty for explosive or other debris impacts with hazard areas larger than 0.5-sigma of the debris impact dispersion. Inert debris generally has a casualty area that is small in comparison to its dispersion (less than 0.5-sigma of the impact dispersion) and therefore applying the probability density function, F_D, to the entire casualty area in a single calculation, as required in paragraph (d) of this section, provides for a valid approximation of the hit probability. Explosive and other hazardous debris have much larger casualty areas where, in order to obtain a valid approximation of the hit probability, an integration process is required. The integration process varies depending on the type of situation that exists for the hazardous area with respect to the location of the mean point of impact and its dispersion. These situations produce various integration limits and integration ranges, which are described in paragraph (f) of this section. Figure A417–3 provides an example, using overpressure as the hazard, of the integration process for a single failure-response mode, time point, and debris class that shall be evaluated in accordance with the following:

(1) Figure A417–3 shows a circular overpressure casualty area of radius R_{op} about a grid point where a person is assumed to be located. R_{op} represents the casualty area radius for each debris class, and includes the piece of debris that produces the greatest radius. The probability of casualty is therefore the probability of having an impact of the hazardous explosive debris occurring such that the circle defined by R_{op} covers a grid point location. The probability of impact inside circle R_{op} shall be determined by integrating the hazardous debris' impact density function over the area of circle R_{op}. The circular area of radius R_{max} about the mean point of impact (MPI) represents the limit of all possible impacts, and represents a debris dispersion of four-sigma (4σ). If d is the distance between the MPI and the grid point, the integration must be performed under the density-function surface between the range limits of ($d-R_{op}$) and ($d+R_{op}$), and within the lateral bounds of the hazardous overpressure circle. Because of the assumed circular nature of the impact density functions about their respective MPIs, the integration is performed by slicing the hazardous overpressure circle into n truncated annular sections (or truncated slices) centered at the mean point of impact. One such slice is illustrated in figure A417–3.

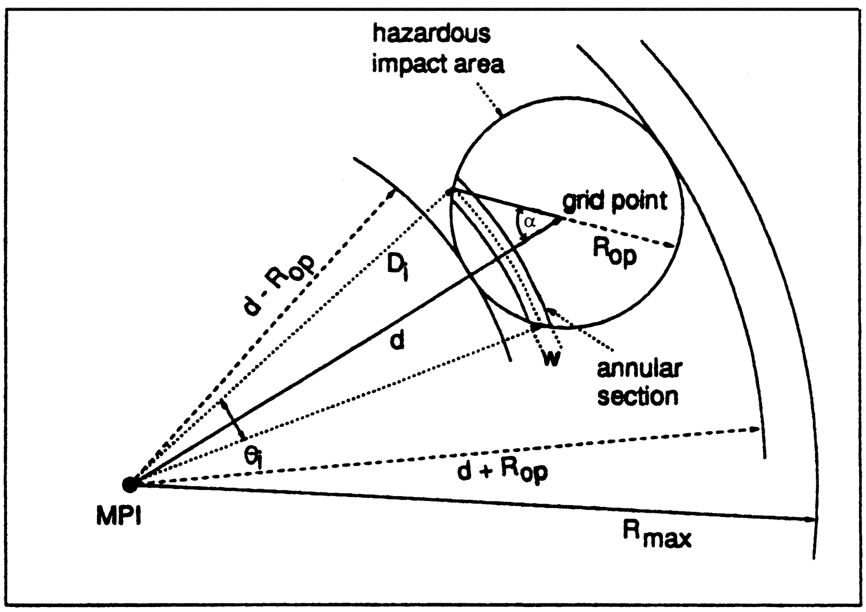


Figure A417-3

(2) If D_i represents the distance from the MPI to the middle arc of the i^{th} truncated slice and w is the width of the slice, the volume under the slice is found by integrating the density function between the range limits of ($D_i - w/2$) and ($D_i + w/2$), and between the angular limits bounded by the sides of the angle θ_i. The sum for all volumes between the limits of ($d - R_{op}$) and ($d+R_{op}$) gives the probability of casualty at the grid point for one hazardous area, in one debris class, for one failure-response mode, and, if applicable, one failure time interval. If n is sufficiently large so that w is sufficiently small, a good approximation for the probability of impact in the i^{th}-truncated slice is:

$$p_i = w \cdot \theta \cdot D_i \cdot F(D_i)$$

Where:

$F(D_i)$ is the density function value at distance D_i from the MPI.

$w\, \theta_i\, D_i$ is the approximate area of the truncated slice.

Slice width w depends on the relative magnitudes of R_{max} and ($d+R_{op}$).

(3) A second approach must be used if the circularized explosive hazard area about the grid point encompasses the MPI as depicted in figure A417–4.

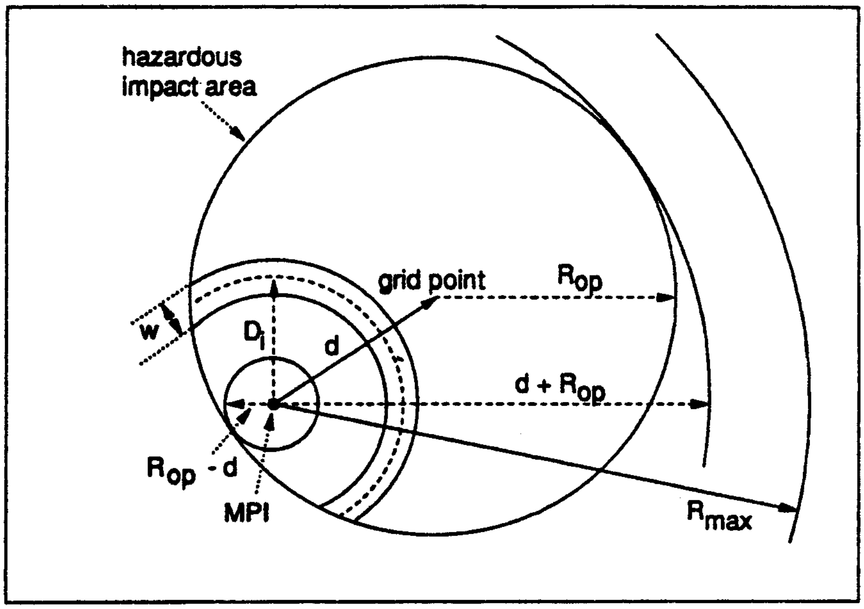


Figure A417-4

Where:

The circular area of radius R_{max} about the MPI represents the limit of all impacts, which is four sigma of the impact dispersion.

d is the distance between the MPI and grid point.

D_i is the distance from the MPI to the middle of the i^{th}-truncated slice.

w is the slice width.

(4) For the case illustrated by figure A417–4, $(R_{op} - d)$ is less than R_{max} and the impact density function is first integrated over the small circular area of radius $(R_{op} - d)$ centered at the MPI, to find the probability of impacting inside this circle. The remainder of the hazardous impact area is sliced into n truncated annular regions, and the impact probability for each slice found by integrating the density function between the range and angular limits of the slice. The probability of casualty at a grid point for explosive or other hazardous debris impacts shall be determined in accordance with the following:

$$p_G = p_0 + \sum_{i=1}^{n} p_i$$

Where:

ρ_0 is the probability of impacting in the circular area of radius $(R_{op} - d)$ centered at the MPI. ρ_0 is determined by integrating ‘‘n’’ probability circles to obtain the probability of casualty for the circle with radius of $(R_{op} - d)$,

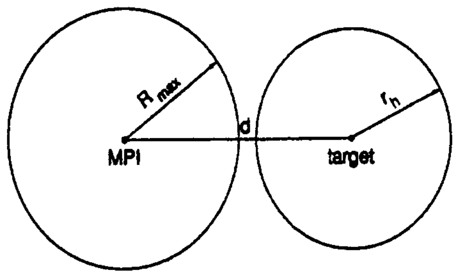
$$p_0 = \sum_{1}^{n} A_i \cdot F(D_i).$$

ρ_i is the probability of the i^{th} slice. ρ_i is computed by integrating slices of width (w) from $(R_{op} - d)$ to Rop or R_{max}, whichever is smallest,

$$p_i = w \cdot \theta_i \cdot D_i \cdot F(D_i).$$

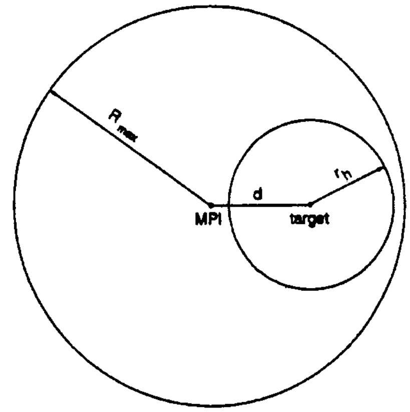
(5) The selected slice width (w) and limits of integration shall be as defined for each situation discussed in paragraph (f) of this section.

(f) *Geometric relationships (situations) in the integration process for determining individual risk.* In computing the probability that a person located at a grid point will be subjected to a hazard with a hazard radius r_h, six geometric situations arise, depending on the relative magnitudes of r_h, R_{max}, and d. These situations are illustrated in figures A417–5 through A417–10, and are referred to as situations 1 through 6. The 6 situations result in a variance in ring widths, integration step size, and integration limits used in computing the impact probabilities in the m+1 concentric circles about the grid point. This results in variations in R_{max}, r_h, and d. The term ‘‘circle R_{max}’’ or ‘‘circle r_h’’ means the circle having a radius of R_{max} or r_h. The circle R_{max} is always centered at the MPI while circles r_h are always centered at the grid point being investigated where a person is assumed to be located. As indicated previously, R_{max} is equal to a four-sigma debris impact dispersion.



Situation (1)

Figure A417-5



Situation (2)

Figure A417-6

(1) *Situation (1).* The circles R_{max} and r_h do not overlap ($d \geq R_{max} + r_h$), as illustrated in figure A417–5. For this situation the probability of impact in circle r_h is zero and no further integration is necessary. $P_C = 0$.

(2) *Situation (2).* The circle R_{max} contains all of circle r_h ($R_{max} \geq d + r_h$), and r_h does not contain the MPI ($r_h \leq d$), as illustrated in figure A417–6. Situation 2 doesn't have an initial inner circle and the integration limits are $d - r_h$ (lower) to $d + r_h$. (Upper). A launch operator's integration process shall incorporate the following:

(i) Compute slice width (w) by:

$$w = \frac{\text{upper limit} - \text{lower limit}}{N} = \frac{2r_h}{100}$$

Where N=100 is arbitrary in this case; N shall be selected so that w is ≥ 10% of σ or the delta integration angle of the target circle is ≥ 10°. Since integration is over π radians, the minimum N is 18.

(ii) Set $\rho_t = 0$. Start the integration by establishing the radius to the midpoint of the first slice w as

$$\frac{w}{2};$$

and the resulting radius becomes:

$$R_s = d - r_h + \frac{w}{2}; n = 1;$$

(iii) Compute F_D by:

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2}$$

Where:

$D = R_S$

σ is the circular normal standard deviation of the debris class impact dispersion of the impacting debris.

F_D is the probability density function.

(iv) Compute (θ using the Law of Cosines:

$$\frac{\theta}{2} = \cos^{-1}\left[\frac{R_S^2 + d^2 - r_h^2}{2R_s d}\right]$$

Where:

d is the distance from the impact point of the debris class to the grid point (see figure A417–2).

r_h is the hazard radius.

(v) Compute the probability of casualty for a slice by:

$$P_i = w \cdot \theta \cdot R_{S_i} \cdot F(R_{Si})$$

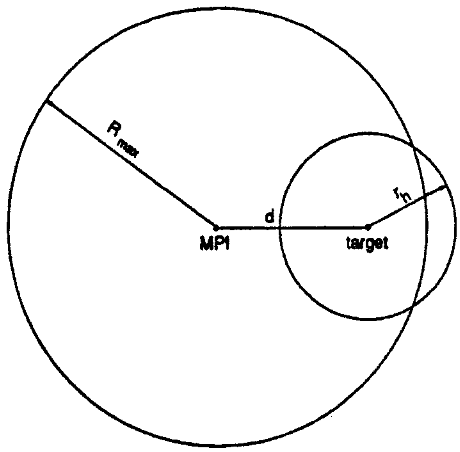
$$P_{C_{A,B,-N}} = P_E \cdot P_i + P_{C_{A,B,-N}}$$

Where:

P_E is the probability of existence for each debris class.

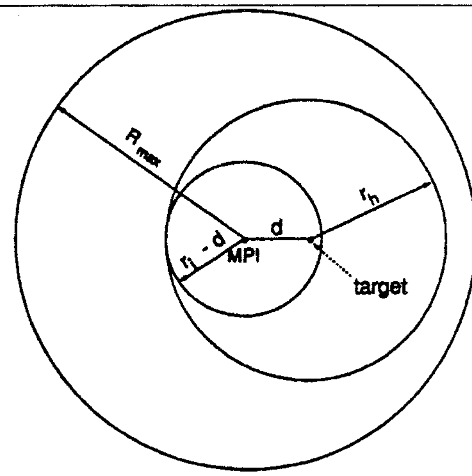
P_C is the probability of casualty for each debris class (A, B---N)

(vi) Integrate over the range of n by incrementing n to n +1 and R_S to R_S + w, and repeating steps (iii) through (v) until n = N.



Situation (3)

Figure 417-7



Situation (4)

Figure 417-8

(3) *Situation (3).* The circle R_{max} does not contain all of circle r_h (R_{max}<d+ r_h), and r_h does not contain the MPI ($r_h \leq d$), as illustrated in figure A417–7. Situation 3 doesn't have an initial inner circle and the integration limits are $d - r_h$ (lower) to R_{max} (upper).

(i) Compute slice width (w) by:

$$w = \frac{\text{upper limit} - \text{lower limit}}{N} = \frac{R_{max} + r_h - d}{100}$$

Where N=100 is arbitrary in this case; N shall be selected so that w is ≥ 10% of σ or the delta integration angle of the target circle is ≥ 10°. Since integration is over π radians, the minimum N is 18.

(ii) Set $p_t = 0$. Start the integration by establishing the radius to the midpoint of the first slice w as

$$\frac{w}{2};$$

and the resulting radius (see figure A417–3) becomes:

$$R_s = d - r_h + \frac{w}{2}; n = 1;$$

(iii) Compute F_D by:

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2}$$

Where:

$D = R_S$.

σ is the circular normal standard deviation of the debris class impact dispersion of the impacting debris.

F_D is the probability density function.

(iv) Compute θ using the Law of Cosines:

$$\frac{\theta}{2} = \cos^{-1}\left[\frac{R_S^2 + d^2 - r_h^2}{2R_s d}\right]$$

Where:

d is the distance from the impact point of the debris class to the grid point (see figure A417–2).

r_h is the hazard radius.

(v) Compute the probability of casualty for a slice by:

$$P_i = w \cdot \theta \cdot R_{S_i} \cdot F(R_{Si})$$
$$P_{C_{A,B,-N}} = P_E \cdot P_i + P_{C_{A,B,-N}}$$

Where:

P_E is the probability of existence for each debris class.

P_C is the probability of casualty for each debris class (A, B---N)

(vi) Integrate over the range of n by incrementing n to n +1 and R_S to R_S + w, and repeating steps (iii) through (v) until n = N.

(4) *Situation (4).* The circle R_{max} contains all of circle r_h ($R_{max} \geq d + r_h$), and r_h contains the MPI (r_h>d), as illustrated in figure A417–8. The impact probability for the small circle of radius ($r_h - d$) is found by closed-form computation and added to the sum obtained from a step-by-step integration across the remainder of circle r_h. Situation 4 has an initial inner circle of radius $r_h - d$ and the integration limits are $r_h - d$ (lower) to r_h+d (upper).

(i) Compute slice width (w) by:

$$w = \frac{\text{upper limit} - \text{lower limit}}{N} = \frac{2d}{100}$$

Where N=100 is arbitrary in the case; N shall be selected so that w is ≥10% of σ or the delta integration angle of the target circle is ≥10°. Since integration is over π radians, the minimum N is 18.

(ii) Set $P_t = 0$. Start the integration by establishing the radius to the midpoint of the first slice w as

$$\frac{w}{2};$$

and the resulting radius (see figure A417–3) becomes:

$$R_s = r_h + \frac{w}{2} - d; n = 1;$$

(iii) Compute F_D by:

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2}$$

Where:

$D = R_S$.

σ is the circular normal standard deviation of the debris class impact dispersion of the impacting debris;

F_D is the probability density function.

(iv) Compute θ using the Law of Cosines

$$\frac{\theta}{2} = \cos^{-1}\left[\frac{R_S^2 + d^2 - r_h^2}{2R_S d}\right]$$

Where:

d is the distance from the impact point of the debris class to the grid point (see figure A417–2).

r_h is the hazard radius.

(v) Compute the probability of casualty for a slice by:

$$P_i = w \cdot \theta \cdot R_{S_i} \cdot F(R_{S_i})$$

$$P_{C_{A,B,-N}} = P_E \cdot P_i + P_{C_{A,B,-N}}$$

Where:

P_E is the probability of existence for each debris class.

P_C is the probability of casualty for each debris class (A, B---N)

(vi) Integrate over the range of n by incrementing n to n+1 and R_S to R_S + w, and repeating steps (iii) through (v) until n = N.

(vii) Compute the casualty probability for the inner circle by subdividing the inner circle with radius $r_h - d$ into 10 circles for integration by:

$$w_r = \frac{r_h - d}{10};$$

(viii) With $r_I = w_r$ and $A_L = 0$, repeat the following for 10 summations:

$$A_i = \pi r_i^2$$

$$D = r_i - \frac{w_r}{2}$$

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2};$$

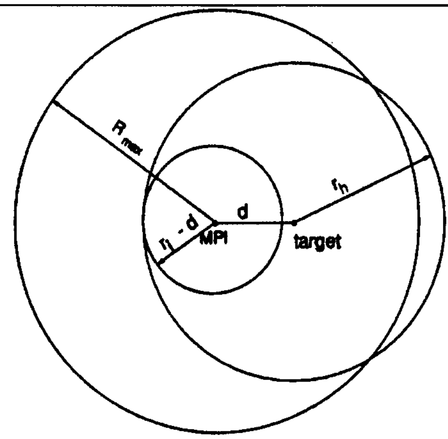
$$A = A_I - A_L$$

$$p_i = A \cdot F(R_{S_i})$$

$$A_L = A_I$$

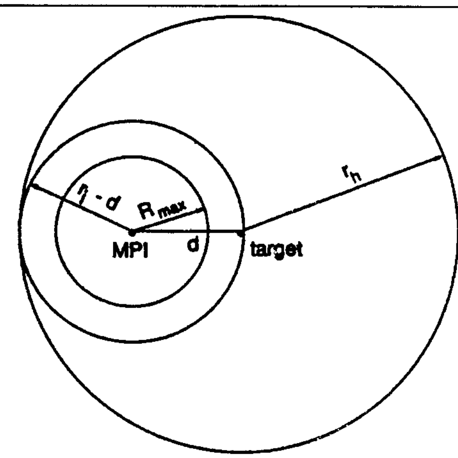
$$r_I = r_I + w_r$$

$$P_{C_{A,B,-N}} = P_E \cdot p_i + P_{C_{A,B,-N}}$$



Situation (5)

Figure A417-9



Situation (6)

Figure A417-10

(5) *Situation (5).* The circle R_{max} does not contain all of circle r_h ($R_{max}<d+r_h$) circle r_h contains the MPI ($r_h>d$), and $R_{max}>r_h - d$, as illustrated in figure A417–9. The impact probability for the small circle of radius ($r_h - d$) is found by closed-form computation and added to the sum obtained from a step-by-step integration across the remainder of circle r_h that is inside circle R_{max}. Situation 5 has an initial inner circle of radius $r_h - d$ and the integration limits are $r_h - d$ (lower) to R_{max} (upper).

(i) Compute slice width (w) by:

$$w = \frac{\text{upper limit} - \text{lower limit}}{N} = \frac{R_{max} + d - r_h}{100}$$

Where N=100 is arbitrary in this case; N shall be selected so that w is ≥ 10% of σ or the delta integration angle of the target circle is ≥ 10°. Since integration is over π radians, the minimum N is 18.

(ii) Set p_t=0. Start the integration by establishing the radius to the midpoint of the first slice w as

$$\frac{w}{2};$$

and the resulting radius (see figure A417–3) becomes:

$$R_s = r_h + \frac{w}{2} - d; n = 1;$$

(iii) Compute F_D by:

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2}$$

Where:

$D=R_S$.

σ is the circular normal standard deviation of the debris class impact dispersion of the impacting debris;

F_D is the probability density function.

(iv) Compute θ using the Law of Cosines:

$$\frac{\theta}{2} = \cos^{-1}\left[\frac{R_S^2 + d^2 - r_h^2}{2R_s d}\right]$$

Where:

d is the distance from the impact point of the debris class to the grid point (see figure A417–2).

r_h is the hazard radius.

(v) Compute the probability of casualty for a slice by:

$$P_i = w \cdot \theta \cdot R_{S_i} \cdot F\left(R_{S_i}\right)$$

$$P_{C_{A,B,-N}} = P_E \cdot p_i + P_{C_{A,B,-N}}$$

Where:

P_E is the probability of existence for each debris class.

P_C is the probability of casualty for each debris class (A, B—N)

(vi) Integrate over the range of n by incrementing n to n+1 and R_S to R_S + w, and repeating steps (iii) through (v) until n = N.

(vii) Compute the casualty probability for the inner circle by subdividing the inner circle with radius $r_h - d$ into 10 circles for integration by:

$$w_r = \frac{r_h - d}{10}$$

(viii) With $r_I = w_r$ and $A_L = 0$, repeat the following for 10 summations:

$$A_i = \pi r_i^2$$

$$D = r_i - \frac{w_r}{2}$$

$$F_D = \frac{e^{-\frac{1}{2}\left(\frac{D}{\sigma}\right)^2}}{2\pi\sigma^2};$$

$$A = A_I - A_L$$

$$p_i = A \cdot F\left(R_{S_i}\right)$$

$$A_L = A_I$$

$$r_I = r_I + w_r$$

$$P_{C_{A,B,-N}} = P_E \times p_i + P_{C_{A,B,-N}}$$

(6) *Situation (6).* The circle R_{max} is contained inside r_h, as illustrated in figure A417–10. The impact probability for the small circle of radius R_{max} is one and no integration is necessary.

$$P_i = 1.$$

$$P_{C_{A,B,-N}} = P_E \cdot P_i + P_{C_{A,B,-N}}$$

TABLE A417–1.—LIQUID PROPELLANT EXPLOSIVE EQUIVALENTS

Propellant combinations	TNT equivalents
LO_2/LH_2	The larger of $8W^{2/3}$ or 14% of W. Where W is the weight of LO2/LH2.
LO_2/LH_2 + LO_2/RP–1	Sum of (20% for LO2/RP–1) the larger of $8W^{2/3}$ or 14% of W. Where W is the weight of LO_2/LH_2.
LO_2/RP–1	20% of W up to 500,000 pounds + 10% of W over 500,000 pounds. Where W is the weight of LO_2/RP–1.
N_2O_4/N_2H_4 (or UDMH or UDMH/N_2H_4 Mixture)	10% of W_2. Where W is the weight of the propellant.

TABLE A417–2.—PROPELLANT HAZARD AND COMPATIBILITY GROUPINGS AND FACTORS TO BE USED WHEN CONVERTING GALLONS OF PROPELLANT INTO POUNDS

Propellant	Hazard group	Compatibility group	Pounds/gallon	°F
Hydrogen Peroxide	II	A	11.6	68
Hydrazine	III	C	8.4	68
Liquid Hydrogen	III	C	0.59	−423
Liquid Oxygen	II	A	9.5	−297
Nitrogen Tetroxide	I	A	12.1	68
RP–1	I	C	6.8	68
UDMH	III	C	6.6	68
UDHM/Hydrazine	III	C	7.5	68

Appendix B to Part 417—Methodology for Performing Debris Risk Analysis

B417.1 General

A launch operator's debris risk analysis required by § 417.227 must be in accordance with the analysis constraints contained in § 417.227 and shall be performed using the equations and methodologies for calculating expected casualty (E_C) contained in this appendix unless, through the licensing process, the launch operator provides a clear and convincing demonstration that an alternate method provides an equivalent level of safety. A launch operator shall compute the total E_C due to debris as the sum of the E_C due to all planned debris impacts determined according to B417.3 and the E_C due to potential launch vehicle failure along the normal flight path, hereafter referred to as overflight E_C, determined in accordance with B417.5. For a launch vehicle that uses a flight termination system, the total E_C due to debris must also account for risk to populations outside the flight control lines in accordance with to B417.7.

B417.3 Planned Impact E_C

(a) *General.* A launch operator shall use the equations and methodologies contained in this section for calculating E_C for planned debris impacts.

(b) *Input for computing planned impact E_C.* A launch operator shall identify the input parameters in this paragraph for computing the E_C for planned debris impacts:

(1) The nominal impact location of each planned debris fragment and the standard deviation (sigma) of the impact dispersion distances from the nominal impact point each of the uprange, downrange, left crossrange, and right crossrange directions. A launch operator shall determine debris impacts and dispersions in accordance with § 417.227(b)(5).

(2) The probability of success of each debris impact, that is, one minus the probability of the launch vehicle failing prior to each debris jettison. The probability of success used for the impact of a planned debris fragment must account for all stages that burn prior to jettison of that debris fragment.

(3) The effective casualty area for each planned impacting debris fragment.

(4) The location and population density of each population center to be evaluated.

(c) *Methodology for computing planned impact E_C.* A launch operator shall compute the E_C for each population center within the five-sigma dispersion of the nominal impact point for each fragment of impacting debris planned as part of normal flight using the equations and steps in this paragraph:

(1) Compute the following for each population center within the five-sigma dispersion of each planned impact of a debris fragment:

$$P_i = [1.0 - P_f] \cdot P_p$$

$$P_p = \frac{A_p}{2\pi\sigma_x\sigma_y} \cdot \left(\exp - \frac{1}{2}\left(\left(\frac{x}{\sigma_x}\right)^2 + \left(\frac{y}{\sigma_y}\right)^2 \right) \right)$$

Where:

P_i is the probability of the planned debris fragment impacting the population center that has area A_p.

P_f is the failure probability of the launch vehicle prior to the stage or other planned impacting debris jettison.

P_p is the probability of impacting inside the population center with area A_p, assuming a successful flight.

A_p is the area of the population center.

σ_y is the crossrange standard diviation of the planned impact dispersion for each planned debris fragment.

σ_x is the downrange standard deviation of the planned impact dispersion for each planned debris fragment.

x and y are the downrange and crossrange distances between the nominal impact point location and the location of the centroid of the population center for each planned debris fragment.

(2) For each immpacting debris fragment, compute E_C for all population centers within the five-sigma dispersion using the following:

$$E_C = \sum P_i \cdot A_C \cdot P_d$$

Where:

P_i is the probability of a planned debris fragment impacting the population center with population density P_d.

A_C is the effective casualty area for the planned impacting debris fragment.

P_d is the population density of each population center.

(3) Sum all E_C values for all planned impacts to compute the total planned debris impact E_C.

B417.5 Methodology for Computing Overflight E_C

(a) *General.* A launch operator shall use the equations and methodologies contained in this section for calculating overflight E_C.

(b) *Input.* A launch operator shall identify the following input parameters:

(1) The nominal launch vehicle trajectory instantaneous impact points as a function of trajectory time and the standard deviation of the normal trajectory impact point dispersion in the crossrange direction for each trajectory time. A launch operator shall use the trajectory data determined in accordance with § 417.205 for an orbital launch or C417.3 of appendix C of this part for the launch of a suborbital rocket.

(2) The failure probability of each launch vehicle stage and the overall launch vehicle failure probability determined in accordance with § 417.227(b)(6).

(3) The effective casualty area for each impacting debris fragment associated with a launch vehicle failure as a function of trajectory time determined in accordance with the debris analysis required by § 417.209.

(c) *Methodology for computing overflight E_C.* A launch operator shall determine overflight E_C using the nominal instantaneous impact point data determined by the trajectory analysis performed in accordance with § 417.205(c) for an orbital launch or appendix C of this part for a suborbital launch for each trajectory time, and the following methodology:

(1) Start at liftoff, trajectory time (T)=0.

(2) Increase the distance along the nominal trajectory by one trajectory time interval (ΔT) to T+ΔT. Form a sector by drawing lines perpendicular to the nominal instantaneous impact point trace that intersect the impact point positions at both T and T+ΔT.

(3) Identify all population centers that are contained or partially contained within the sector and that have a left crossrange or right crossrange distance from the nominal instantaneous impact point that is less than or equal to five-sigma of the crossrange trajectory dispersion. If no population centers are identified repeat step (2). For each population center identified calculate the crossrange component of the probability of impact (P_y) using the following:

$$P_y = \frac{1}{\sqrt{2\pi}} \cdot \frac{\Delta y}{\sigma_y} \cdot e^{-\frac{1}{2}\left[\frac{y}{\sigma_y}\right]^2}$$

Where:

y is the crossrange distance from the nominal instantaneous impact point trace for the trajectory time being evaluated to the middle of the population center.

σ_y is the crossrange standard deviation for the trajectory time being evaluated.

Δy is the crossrange width of the population center for the trajectory time interval being evaluated. For computational purposes, Δy must not exceed one half the value of σ_y. If so, Δy shall be broken into equal parts with each part less than one half of the value of σy. P_y of each part must then be computed and summed to obtain the entire P_y.

(4) Calculate the probability of impact (P_i) for the overflight of each population center as follows:

$$P_i = P_f \cdot \left[\frac{T_D}{T_B}\right] \cdot P_y$$

Where:

P_f is the launch vehicle failure rate for the trajectory time interval being evaluated. A launch operator shall apply the failure rate for the launch vehicle stage that will be thrusting during the trajectory time interval being evaluated (if that specific failure rate is known) or the launch operator shall use the launch vehicle failure rate for the entire flight.

T_D is dwell time of the instantaneous impact point over the population center during the trajectory time interval being evaluated, assuming the launch vehicle flies a normal trajectory over the centroid of the population center. In each case T_D must be less than or equal to ΔT.

T_B is the burn time. If a launch operator uses a stage failure rate for P_f, T_B must be the burn time for that stage. If the launch operator uses the launch vehicle failure rate for the entire flight for P_f, T_B must equal the total launch vehicle burn time for all stages.

The ratio of T_D over T_B is the downrange component of the probability of impact for the population center being evaluated.

(5) For the current trajectory time, calculate E_C for each population center using the following:

$$E_C = \sum P_i \cdot A_C \cdot P_d$$

Where:

P_i is the probability of impacting the population center with population density P_d.

A_C is the sum total effective casualty area that accounts for all impacting debris fragment associated with a launch vehicle failure for the current trajectory time.

P_d is the population density of each population center.

The product of $A_C \cdot P_d$ shall be limited to no greater than the total population of the population center being evaluated.

(6) Repeat steps (2) through (5) for all trajectory time intervals until orbit or impact of the final stage is achieved. Sum all E_C values for all population centers and for all trajectory time intervals to determine the total overflight E_C.

B417.7 E_C for Populations Outside Flight Control Lines

(a) *General.* For a launch vehicle that uses a flight termination system, a launch operator shall use the equations and methodologies contained in this section to identify any populations outside the flight control lines in the area surrounding the launch point that could be exposed to significant risk due to impacting launch vehicle debris. The risk to such populations must be accounted for in the launch operator's debris risk analysis in accordance with § 417.227(b)(11).

(b) *Populations outside the flight control lines.* To determine if a debris risk analysis is required for populations outside the flight control lines, a launch operator shall compare population densities in sectors about the launch point to the population limits shown in figures B417.7–1 through B417.7–4 for the launch operator's launch vehicle type. Launch vehicle types are defined in paragraph (c) of this section. The launch operator shall determine the population densities in each sector based on the most current census data and projections for the date and time of flight.

(c) *Population limits.* Figures B417–1 through B417–4 and their accompanying tables identify population sectors around a launch point and the population limits for each sector as a function of the size of the launch vehicle and whether it is a new or mature launch vehicle. A launch operator shall use the population limits for a mature launch vehicle if its launch vehicle has flown more than 30 times and the launch operator demonstrates that the total vehicle failure rate is less than 10%. Otherwise, the launch operator shall use the population limits for a new launch vehicle. A launch operator shall use the population limits for a large launch vehicle if its launch vehicle is capable of lifting an 18,500-pound payload to a 100-nautical mile orbit or larger. Otherwise, a launch operator shall use the population limits for a medium or small launch vehicle. A launch operator shall determine the population limits that apply to its analysis in accordance with the following:

(1) *For a large mature launch vehicle.* A launch operator shall use the sector population limits labeled in figure B417–1.

(2) *For a medium or small mature launch vehicle.* A launch operator shall use the sector population limits in figure B417–2.

(3) *For a large new launch vehicle.* A launch operator shall use the sector population limits in figures B417–3.

(4) *For a medium or small new launch vehicle.* A launch operator shall use the sector population limits in figures B417–4.

(5) If a medium or small launch vehicle uses solid rocket motors in any stage other than the first stage, the tables for a large launch vehicle must be used.

(6) If a large launch vehicle uses solid rocket motors in any stage other than the first stage, it must be evaluated on a case by case basis.

(d) *Methodology for screening populations outside flight control lines.* A launch operator shall use the populations determined in accordance with paragraph (b) of this section and the sector population limits determined in accordance with paragraph (c) of this section to identify any populations outside flight control lines for which debris risk analysis must be performed. The launch operator shall screen the populations in each sector identified in figures B417–1 through B417–4 in accordance with the following:

(1) The launch operator shall compare the population in each sector with the population limit for each sector as determined according to paragraphs (b) and (c) of this section. If the population in a sector exceeds the population limit for that sector, the launch operator shall perform a debris risk analysis for that sector in accordance with paragraph (e) of this section.

(2) For all sectors with a population that is less than the limit, the launch operator shall determine the total population ratio by summing the ratios of the population to the population limit for all sectors. If the sum of population ratios for all sectors is greater than 1.0, the launch operator shall perform a debris risk analysis for a sufficient number of sectors to reduce the sum of population ratios of the remaining sectors to less than 1.0.

(e) *Debris risk analysis for populations outside flight control lines.* A launch operator shall perform an analysis to determine E_C for each population sector requiring a debris risk analysis as determined according to paragraph (d) of this section. The launch operator shall demonstrate the validity of such an analysis on a case-by-case basis through the licensing process. The launch operator's analysis must be in accordance with the following:

(1) The analysis must account for:

(i) All launch vehicle failure response modes and their probability of occurrence.

(ii) Potential launch vehicle failures beginning at liftoff and for each nominal trajectory time at intervals of no greater than two seconds.

(iii) The effects of intact launch vehicle impacts and potential launch vehicle breakup resulting from vehicle turns that exceed structural limits, and in accordance with the probability of their occurrence.

(iv) For launch vehicle breakup, the analysis must account for all debris impact locations and debris dispersion. The debris dispersion must account for inadvertent separation destruct system time delays, variances in impacts caused by winds, differences in debris ballistic coefficient, drag uncertainties, and breakup imported velocities.

(v) The probability density function for each debris class and for each launch vehicle failure response mode.

(vi) The inert and explosive debris effects on casualty area. For inert debris fragments the analysis must account for the effects of bounce, splatter, and slide.

(vii) The population density for each population center located within each sector being evaluated.

(viii) For each population center within the sector, the analysis must account for the probabilities of casualty from all debris, for all failure times, and all launch vehicle failure responses.

(2) Beginning at liftoff, trajectory time = 0, and for each nominal trajectory time, at intervals of no greater than two seconds, the launch operator shall compute E_C for each population center within each sector being evaluated and for each potential debris impact. The potential debris impacts must include potential launch vehicle intact impact and the impact of debris fragments resulting from breakup. The launch operator shall use the following equation:

$$E_C = P_i \cdot A_C \cdot P_d \cdot P_{FSS}$$

Where:

P_i is the probability of the debris being evaluated impacting within the population center being evaluated for the trajectory time being evaluated.

A_C is the effective casualty area for the impacting debris.

P_d is the population density of the population center being evaluated located within the sector.

P_{FSS} is the probability of failure of the launch operator's flight safety system. A launch operator may use 0.002 as the flight safety system probability of failure if the flight safety system is in compliance with the flight safety system requirements of subpart D of this part. For an alternate flight safety system approved in accordance with § 417.107(a)(3), the launch operator shall demonstrate the validity of the probability of failure on a case-by-case basis through the licensing process.

(3) The launch operator shall sum the E_C values for each potential debris impact, for each population center within a population sector being evaluated, and for each trajectory time and include this sum in the total E_C due to debris for the launch.

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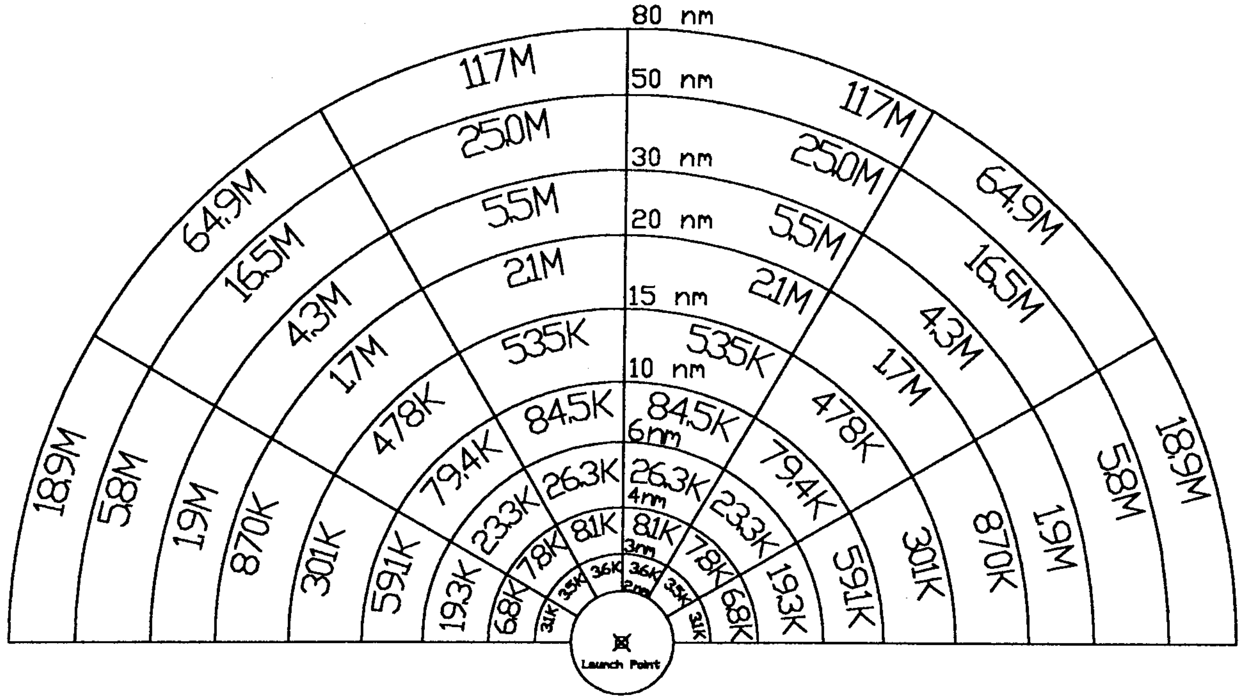
Figure B417.7-1, Population Limits for Large Mature Launch Vehicles

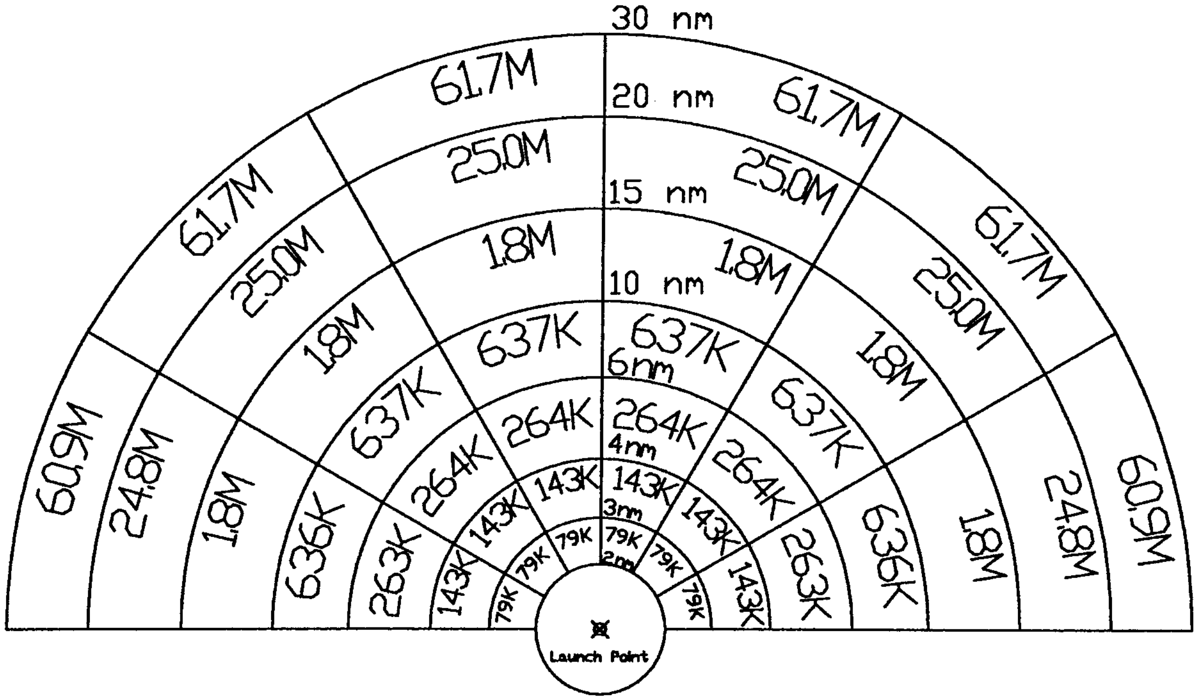


Numbers in sectors are given in terms of maximum number of people per sector.

Note: Each sector encompasses 30° of azimuth uprange of the launch point. The accompanying table contains the population limits for each sector.

Sector		Population Limits		
		Azimuth Angle from Uprange		
Range (nm)	Area (nm^2)	0° - 30°	30° - 60°	60° - 90°
2 – 3	1.309	3,556	3,478	3,111
3 – 4	1.833	8,084	7,770	6,775
4 – 6	5.236	26,340	23,320	19,320
6 – 10	16.76	84,530	79,370	59,140
10 – 15	32.72	535,300	477,800	300,800
15 – 20	45.81	2,135,000	1,744,000	870,300
20 – 30	130.9	5,531,000	4,290,000	1,926,000
30 – 50	418.9	25,010,000	16,500,000	5,757,000
50 – 80	1021	116,700,000	64,940,000	18,910,000

Figure B417.7-2, Population Limits for Medium Mature Launch Vehicles

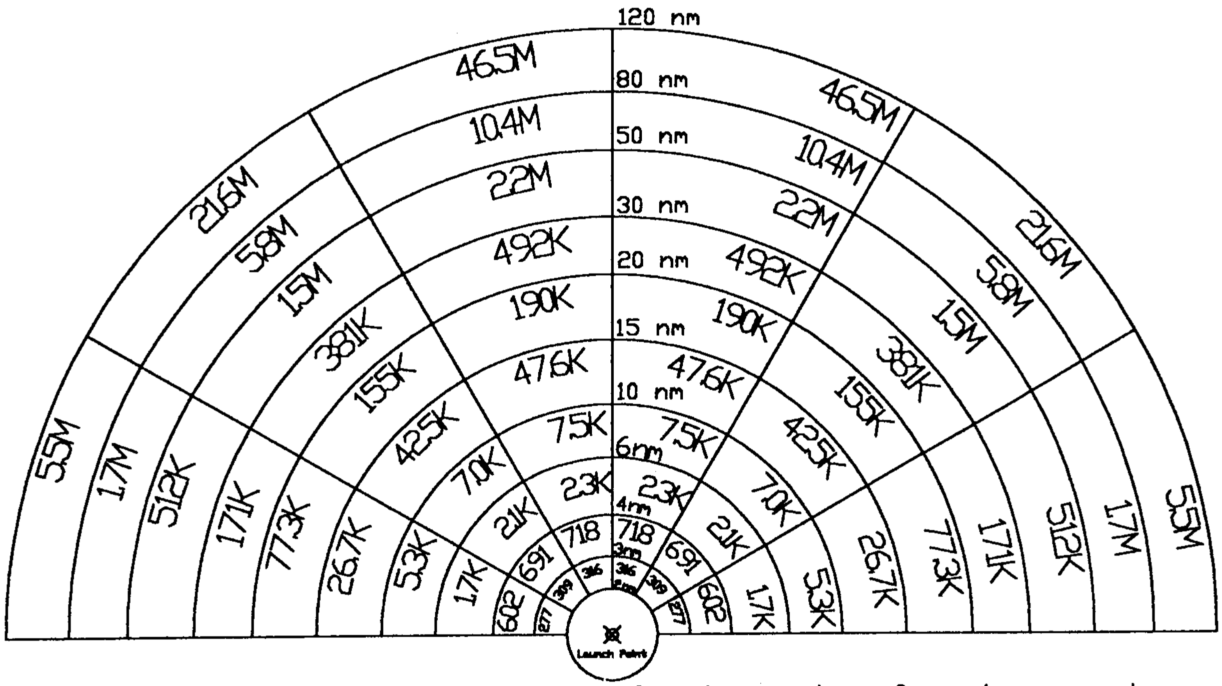


Numbers in sectors are given in terms of maximum number of people per sector.

Note: Each sector encompasses 30° of azimuth uprange of the launch point. The accompanying table contains the population limits for each sector.

Sector		Population Limits		
		Azimuth Angle from Uprange		
Range (nm)	Area (nm^2)	0° - 30°	30° - 60°	60° - 90°
2 – 3	1.309	78,930	78,930	78,740
3 – 4	1.833	143,000	143,000	142,800
4 – 6	5.236	263,500	263,500	263,200
6 – 10	16.76	636,900	636,900	636,100
10 – 15	32.72	1,815,000	1,813,000	1,812,000
15 – 20	45.81	25,030,000	25,020,000	24,770,000
20 – 30	130.9	61,730,000	61,690,000	60,900,000

Figure B417.7-3, Population Limits for Large New Launch Vehicles

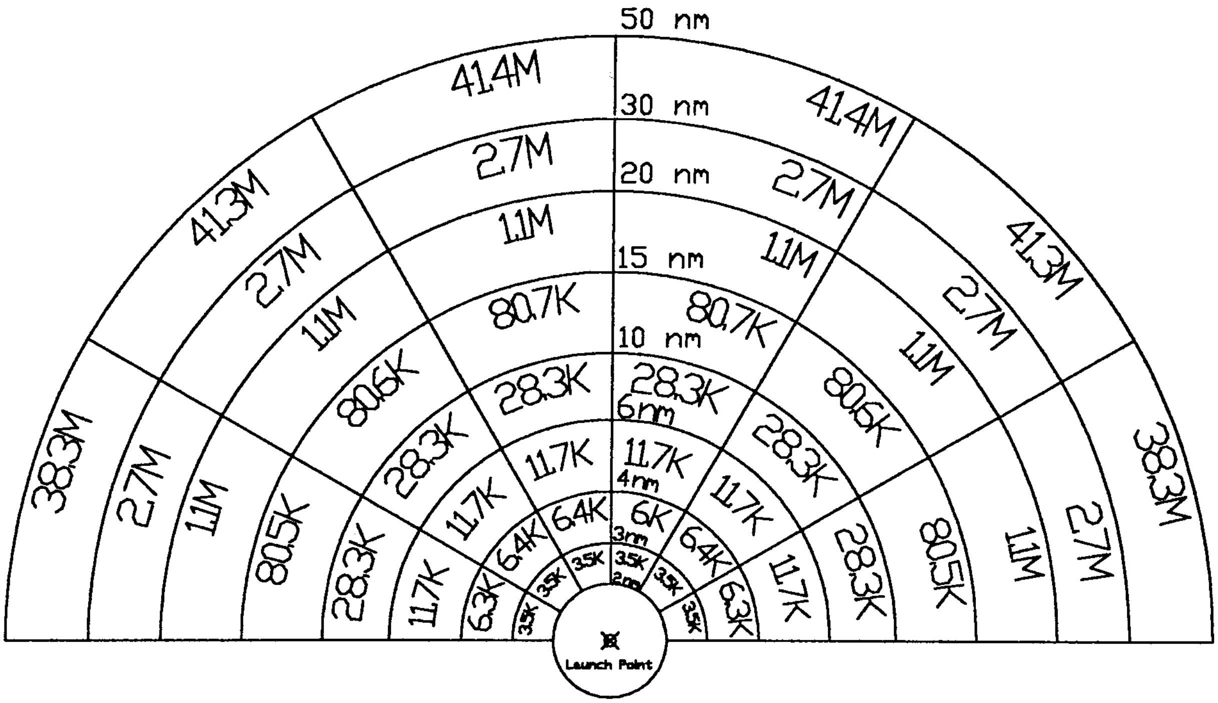


Numbers in sectors are given in terms of maximum number of people per sector.

Note: Each sector encompasses 30° of azimuth uprange of the launch point. The accompanying table contains the population limits for each sector.

Sector		Population Limits		
		Azimuth Angle from Uprange		
Range (nm)	Area (nm^2)	0° - 30°	30° - 60°	60° - 90°
2 – 3	1.309	316	309	277
3 – 4	1.833	718	691	602
4 – 6	5.236	2,342	2,073	1,718
6 – 10	16.76	7,513	7,047	5,258
10 – 15	32.72	47,570	42,460	26,740
15 – 20	45.81	189,800	155,000	77,340
20 – 30	130.9	491,600	381,400	171,200
30 – 50	418.9	2,223,000	1,467,000	511,800
50 – 80	1021	10,370,000	5,770,000	1,681,000
80 – 120	2094	46,530,000	21,630,000	5,495,000

Figure B417.4, Population Limits for Medium New Launch Vehicles



Numbers in sectors are given in terms of maximum number of people per sector.

Note: Each sector encompasses 30° of azimuth uprange of the launch point. The accompanying table contains the population limits for each sector.

Sector		Population Limits		
		Azimuth Angle from Uprange		
Range (nm)	Area (nm^2)	0° - 30°	30° - 60°	60° - 90°
2 – 3	1.309	3,508	3,508	3,500
3 – 4	1.833	6,357	6,357	6,345
4 – 6	5.236	11,710	11,710	11,700
6 – 10	16.76	28,300	28,300	28,260
10 – 15	32.72	80,650	80,580	80,520
15 – 20	45.81	1,112,000	1,112,000	1,101,000
20 – 30	130.9	2,743,000	2,741,000	2,706,000
30 – 50	418.9	41,410,000	41,290,000	38,310,000

B417.9 Alternative Debris Risk Analysis

(a) A launch operator may elect to simplify a debris risk analysis by making conservative assumptions that would lead to an overestimation of the total E_C due to debris. The intent of such an analysis would be to show that the overestimated E_C does not exceed the public safety criteria required by § 417.107(b). Such an analysis must be approved by the FAA during the licensing process. In addition to the analysis products required by § 417.227, a launch operator shall submit the following with respect to an alternative analysis:

(1) Identification of all assumptions made and explanation of how they relate to the debris risk analysis defined in B417.3, B417.5, and B417.7 of this appendix.

(2) Demonstration of how each assumption leads to overestimation of the total E_C due to debris.

(b) The following are examples of simplifications to the debris risk analysis that may be acceptable for a specific launch scenario:

(1) When flying over a remote area with limited population density, it may suffice to assume that P_i has a value of 1.0 for all population centers being evaluated.

(2) When computing overflight E_C, a launch operator may choose to analyze a worst case flight trajectory within the five-sigma corridor.

(3) A launch operator may choose to combine population centers and assume a

worst case population density for the combined area.

(4) A launch operator may choose to assume a worst case population density for the entire local launch area.

(5) A launch operator may choose to assume a worst case effective casualty area.

(c) A launch operator may employ an alternative analytical approach if the launch operator demonstrates, clearly and convincingly through the licensing process, that the proposed alternative provides an equivalent level of safety. The following requirements apply to any such alternative:

(1) The launch operator must demonstrate that any changes in inputs and assumptions are reasonable, based on accurate data, and statistically valid.

(2) A launch operator shall use the equations for calculating collective debris expected casualty required in this appendix.

(3) Use of risk analysis models such as those used at federal launch ranges in conjunction with validated input data, Monte Carlo simulation approaches, and refined (that is, higher fidelity) population data may constitute acceptable tools in support of a launch operator's alternative analysis.

(4) A launch operator may perform a sheltering analysis as a means of refining expected casualty calculations if the launch operator demonstrates that the analysis is reasonable, based on accurate data, and statistically valid. Rather than assuming that all people are in the open, a sheltering analysis accounts for populations that would be within a structure that may or may not provide the people some protection during the flight of a launch vehicle. Any sheltering analysis must account for any debris that will collapse or penetrate a structure and the increased casualty area that would result from such an event.

Appendix C to Part 417—Flight Safety Analysis for an Unguided Suborbital Rocket Flown With a Wind Weighting Safety System and Hazard Areas for Planned Impacts for All Launches

C417.1 General

This appendix contains methodologies for performing the flight safety analysis required for the launch of an unguided suborbital rocket flown with a wind weighting safety system. A launch operator shall perform a flight safety analysis to determine the launch parameters and conditions under which an unguided suborbital rocket may be flown using a wind weighting safety system in accordance with § 417.235. The results of this analysis must show that any adverse effects resulting from flight will be contained within controlled operational areas and any flight hardware or payload impacts will occur within planned impact areas. The flight safety analysis must demonstrate compliance with the safety criteria and operational requirements for the launch of an unguided suborbital rocket contained in § 417.125. A launch operator shall ensure that the flight safety analysis for an unguided suborbital rocket is conducted in accordance with the methodologies provided in this appendix unless the launch operator demonstrates, through the licensing process, that an alternate method provides an equivalent level of safety.

C417.3 Trajectory Analysis

(a) *General.* A launch operator shall perform a trajectory analysis for the flight of an unguided suborbital rocket to determine the launch vehicle's nominal trajectory, nominal drag impact points, and potential three-sigma dispersions about each nominal drag impact point.

(b) *Definitions.* A launch operator shall employ the following definitions when determining an unguided suborbital rocket's trajectory and drag impact points:

(1) *Drag impact point* means the intersection of a predicted ballistic trajectory of an unguided suborbital rocket stage or other impacting component with the Earth's surface. A drag impact point reflects the effects of atmospheric influences as a function of drag forces and mach number.

(2) *Maximum range trajectory* means an optimized trajectory, extended through fuel exhaustion of each stage, to achieve a maximum downrange drag impact point.

(3) *Nominal trajectory* means the trajectory that an unguided suborbital rocket will fly if all rocket aerodynamic parameters are as expected without error, all rocket internal and external systems perform exactly as planned, and there are no external perturbing influences, such as winds, other than atmospheric drag and gravity.

(4) *Normal flight* means all possible trajectories of a properly performing unguided suborbital rocket whose drag impact point location does not deviate from its nominal location more than three sigma in each of the uprange, downrange, left crossrange, or right crossrange directions.

(5) *Performance error parameter* means a quantifiable perturbing force that contributes to the dispersion of a drag impact point in the uprange, downrange, and cross-range directions of an unguided suborbital rocket stage or other impacting launch vehicle component. Performance error parameters for the launch of an unguided suborbital rocket reflect rocket performance variations and any external forces that can cause offsets from the nominal trajectory during normal flight. Performance error parameters include thrust, thrust misalignment, specific impulse, weight, variation in firing times of the stages, fuel flow rates, contributions from the wind weighting safety system employed, and winds.

(c) *Input.* A trajectory analysis requires the inputs necessary to produce a six-degree-of-freedom trajectory. When employing commercially available trajectory software or any trajectory software developed specifically for a launch, a launch operator must identify the following as inputs to the trajectory computations:

(1) *Launcher data.* Geodetic latitude and longitude; height above sea level; location errors; and launch azimuth and elevation.

(2) *Reference ellipsoidal earth model.* Name of the earth model employed, semi-major axis, semi-minor axis, eccentricity, flattening parameter, gravitational parameter, rotation angular velocity, gravitational harmonic constants, and mass of the earth.

(3) *Vehicle characteristics for each stage.* A launch operator shall identify the following for each stage of an unguided suborbital rocket's flight:

(i) Nozzle exit area of each stage.

(ii) Distance from the rocket nose-tip to the nozzle exit for each stage.

(iii) Reference drag area and reference diameter of the rocket including any payload for each stage of flight.

(iv) Thrust as a function of time.

(v) Propellant weight as a function of time.

(vi) Coefficient of drag as a function of mach number.

(vii) Distance from the rocket nose-tip to center of gravity as a function of time.

(viii) Yaw moment of inertia as a function of time.

(ix) Pitch moment of inertia as a function of time.

(x) Pitch damping coefficient as a function of mach number.

(xi) Aerodynamic damping coefficient as a function of mach number.

(xii) Normal force coefficient as a function of mach number.

(xiii) Distance from the rocket nose-tip to center of pressure as a function of mach number.

(xiv) Axial force coefficient as a function of mach number.

(xv) Roll rate as a function of time.

(xvi) Gross mass of each stage.

(xvii) Burnout mass of each stage.

(xviii) Vacuum thrust.

(xix) Vacuum specific impulse.

(xx) Stage dimensions.

(xxi) Weight of each spent stage.

(xxii) Payload mass properties.

(xxiii) Nominal launch elevation and azimuth.

(4) *Launch events.* Stage ignition times, stage burn times, and stage separation times, referenced to ignition time of first stage.

(5) *Atmosphere.* Density as a function of altitude, pressure as a function of altitude, speed of sound as a function of altitude, temperature as a function of altitude.

(6) *Wind errors.* Error in measurement of wind direction as a function of altitude and wind magnitude as a function of altitude, wind forecast error, such as error due to time delay from wind measurement to launch.

(d) *Methodology for determining the nominal trajectory and nominal drag impact points.* A launch operator shall employ steps (d)(1)–(d)(3) of this section to determine the nominal trajectory and the nominal drag impact point locations for each impacting rocket stage and component:

(1) A launch operator shall identify each performance error parameter associated with the unguided suborbital rocket's design and operation and the value for each parameter that reflect nominal rocket performance. These performance error parameters include thrust misalignment, thrust variation, weight variation, fin misalignment, impulse variation, aerodynamic drag variation, staging timing variation, stage separation-force variation, drag error, uncompensated wind, launcher elevation angle error, launcher azimuth angle error, launcher tip-off, and launcher location error.

(2) A launch operator shall perform a no-wind trajectory simulation using a six-degrees-of-freedom (6–DOF) trajectory simulation with all performance error

parameters set to their nominal values to determine the impact point of each stage or component. The 6–DOF trajectory simulation must provide rocket position translation along three axes of an orthogonal earth centered coordinate system and rocket orientation in roll, pitch and yaw. The 6-DOF trajectory simulation must compute the translations and orientations in response to forces and moments internal and external to the rocket including the effects of the input data required in paragraph (c) of this section. The FAA will permit a launch operator to incorporate the following assumptions in a 6–DOF trajectory simulation:

(i) The airframe may be treated as a rigid body.

(ii) The airframe may have a plane of symmetry coinciding with the vertical plane of reference.

(iii) The vehicle may assume to have aerodynamic symmetry in roll.

(iv) The airframe may have six degrees-of-freedom.

(v) The aerodynamic forces and moments may be functions of mach number and may be linear with small flow incidence angles of attack.

(3) A launch operator shall tabulate the geodetic latitude and longitude of the launch vehicle's nominal drag impact point as a function of trajectory time and the final nominal drag impact point of each planned impacting stage or component.

(e) *Methodology for determining maximum downrange drag impact points.* A launch operator shall compute the maximum possible downrange drag impact point for each rocket stage and impacting component. A launch operator shall use the nominal drag impact point methodology defined in paragraph (d) of this section modified to optimize the unguided suborbital rocket's performance and flight profile to create the conditions for a maximum downrange drag impact point, including fuel exhaustion for each stage and impacting component.

(f) *Methodology for computing drag impact point dispersions.* A launch operator shall employ the steps in paragraphs (f)(1)–(f)(3) of this section when determining the dispersions in terms of drag impact point distance standard deviations in uprange, downrange, and crossrange direction from the nominal drag impact point location for each stage and impacting component:

(1) For each stage of flight, a launch operator shall identify the plus and minus one-sigma values for each performance error parameter identified in accordance with paragraph (d)(1) of this section (i.e., nominal value plus one standard deviation and nominal value minus one standard deviation). A launch operator shall determine the dispersion in downrange, uprange, and left and right crossrange for each impacting stage and component. This is done by either performing a Monte Carlo analysis that assumes a normal distribution of each performance error parameter or by determining the dispersion by a root-sum-square method in accordance with paragraph (f)(2) of this section.

(2) When using a root-sum-square method to determine dispersion, a launch operator shall determine the deviations for a given stage by evaluating the deviations produced in that stage due to the performance errors in that stage and all preceding stages of the launch vehicle as illustrated in Table C417–1, and by computing the square root of the sum of the squares of each deviation caused by each performance error parameter's one sigma dispersion for each stage in each of the right crossrange, left crossrange, uprange and downrange directions. A launch operator shall evaluate the performance errors for one stage at a time, with the performance of all subsequent stages assumed to be nominal. A launch operator's root-sum-square method must incorporate the following requirements:

TABLE C417–1.—ILLUSTRATIVE SIMULATION RUNS REQUIRED TO DETERMINE DRAG IMPACT POINT DISPERSIONS FOR A THREE STAGE LAUNCH VEHICLE.

Trajectory simulation runs stage performance error parameters	Dispersion being determined		
	Stage 1	Stage 2	Stage 3
Stage 1 errors	X[1]		
Stage 1 errors, Stage 2 nominal		X	
Stage 1 nominal, Stage 2 errors		X	
Stage 1 errors, Stage 2 nominal, Stage 3 nominal			X
Stage 1 nominal, Stage 2 errors, Stage 3 nominal			X
Stage 1 nominal, Stage 2 nominal, Stage 3 errors			X

[1] An X in a given stage column indicates that the noted simulation runs are required to determine the dispersion for that stage.

(i) With the 6–DOF trajectory simulation used to determine nominal drag impact points in accordance with paragraph (d) of this section, perform a series of trajectory simulation runs for each stage and planned ejected debris such as a fairing, payload, or other component, and, for each simulation, model only one performance error parameter set to either its plus or minus one-sigma value. All other performance error parameters for a given simulation run must be set to their nominal values. Continue until a trajectory simulation run is performed for each plus one-sigma performance error parameter value and each minus one-sigma performance error parameter value for the stage or the planned ejected debris being evaluated. For each trajectory simulation run and for each impact being evaluated, tabulate the downrange, uprange, left crossrange, and right crossrange drag impact point distance deviations measured from the nominal drag impact point location for that stage or planned debris.

(ii) For uprange, downrange, right crossrange, and left crossrange, compute the square root of the sum of the squares of the distance deviations in each direction. The square root of the sum of the squares distance value for each direction represents the one-sigma drag impact point dispersion in that direction. For a multiple stage rocket, perform the first stage series of simulation runs with all subsequent stage performance error parameters set to their nominal value. Tabulate the uprange, downrange, right crossrange, and left crossrange distance deviations from the nominal impact for each subsequent drag impact point location caused by the first stage one-sigma performance error parameter. Use these deviations in determining the total drag impact point dispersions for the subsequent stage impacts as described in paragraph (f)(2)(iii) of this section.

(iii) For each subsequent stage impact of an unguided suborbital rocket, determine the one-sigma impact dispersions by first determining the one-sigma distance deviations for that stage impact caused by each preceding stage as described in paragraph (f)(2)(ii) of this section. Then perform a series of simulation runs and tabulate the uprange, downrange, right crossrange, and left crossrange drag impact point distance deviations as described in paragraph (f)(2)(i) for that stage's one-sigma performance error parameter values with the preceding stage performance parameters set to nominal values. For each uprange, downrange, right crossrange, and left crossrange direction, compute the square root of the sum of the squares of the second stage impact distance deviations due to that stage's and each preceding stage's one-sigma performance error parameter values. This square root of the sum of the squares distance value for each direction represents the total one-sigma drag impact point dispersion in that direction for the nominal drag impact point location of that stage. Use these deviations when determining the total drag impact point dispersions for the subsequent stage impacts.

(3) A launch operator shall determine a three-sigma dispersion area for each impacting stage or component as an ellipse that is centered at the nominal drag impact point location and has semi-major and semi-minor axes along the uprange, downrange, left crossrange, and right crossrange axes. The length of each axis must be three times as large as the total one-sigma drag impact point dispersions in each direction.

(g) *Trajectory analysis products for a suborbital rocket.* A launch operator shall submit the following products of a trajectory analysis for an unguided suborbital rocket to the FAA in accordance with § 417.235(g):

(1) A description of the process that the launch operator used for performing the trajectory analysis including the number of simulation runs and the process for any Monte Carlo analysis performed.

(2) A description of all assumptions and procedures the launch operator used in deriving each of the performance error parameters and their standard deviations.

(3) Launch point origin data: name, geodetic latitude (+N), longitude (+E), geodetic height, and launch azimuth measured clockwise from true north.

(4) Name of reference ellipsoid earth model used. If a launch operator employs a reference ellipsoid earth model other than WGS–84, Department of Defense World Geodetic System, Military Standard 2401 (Jan. 11, 1994), a launch operator shall identify the semi-major axis, semi-minor axis, eccentricity, flattening parameter, gravitational parameter, rotation angular velocity, gravitational harmonic constants (e.g., J2, J3, J4), and mass of earth.

(5) If a launch operator converts latitude and longitude coordinates between different ellipsoidal earth models to complete a trajectory analysis, the launch operator shall submit the equations for geodetic datum conversions and a sample calculation for converting the geodetic latitude and longitude coordinates between the models employed.

(6) A launch operator shall submit tabular data that lists each performance error parameter used in the trajectory computations and each performance error parameter's plus and minus one-sigma values. If the launch operator employs a Monte Carlo analysis method for determining the dispersions about the nominal drag impact point, the tabular data must list the total one-sigma drag impact point distance deviations in each direction for each impacting stage and component. If the launch operator employs the square root of the sum of the squares method described in paragraph (f)(2) of this section, the tabular data must include the one-sigma drag impact point distance deviations in each direction due to each one-sigma performance error parameter value for each impacting stage and component.

(7) A launch operator shall submit a graphical depiction showing geographical landmasses and the nominal and maximum range trajectories from liftoff until impact of the final stage. The graphical depiction must plot trajectory points in time intervals of no greater than one second during thrusting flight and for times corresponding to ignition, thrust termination or burnout, and separation of each stage or impacting body. If there are less than four seconds between stage separation or other jettison events, a launch operator must reduce the time intervals between plotted trajectory points to 0.2 seconds or less. The graphical depiction must show total launch vehicle velocity as a function of time, present-position ground-range as a function of time, altitude above the reference ellipsoid as a function of time, and the static stability margin as a function of time.

(8) A launch operator shall submit tabular data that describes the nominal and maximum range trajectories from liftoff until impact of the final stage. The tabular data must include the time after liftoff, altitude above the reference ellipsoid, present position ground range, and total launch vehicle velocity for ignition, burnout, separation, booster apogee, and booster impact of each stage or impacting body. The launch operator shall submit the tabular data for the same time intervals required by paragraph (g)(7) of this section.

(9) A launch operator shall submit a graphical depiction showing geographical landmasses and the unguided suborbital rocket's drag impact point for the nominal trajectory, the maximum impact range boundary, and the three-sigma drag impact point dispersion area for each impacting stage or component. The graphical depiction must show the following in relationship to each other: the nominal trajectory, a circle whose radius represents the range to the farthest downrange impact point that results from the maximum range trajectory, and the three-sigma drag impact point dispersions for each impacting stage and component.

(10) A launch operator shall submit tabular data that describes the nominal trajectory, the maximum impact range boundary, and each three-sigma drag impact point dispersion area. The tabular data must include the geodetic latitude (positive north of the equator) and longitude (positive east of the Greenwich Meridian) of each point describing the nominal drag impact point positions, the maximum range circle, and each three-sigma impact dispersion area boundary. Each three-sigma dispersion area shall be described by no less than 20 coordinate pairs. All coordinates must be rounded to the fourth decimal point.

C417.5 Hazard Area Analysis

(a) *General.* A launch operator shall perform a hazard area analysis for the flight of an unguided suborbital rocket as required by § 417.235(c). A launch operator shall establish hazard areas to protect the public from planned events during the flight of an unguided suborbital rocket. A launch operator's hazard area analysis must determine a flight hazard area around the launch point and impact hazard areas, aircraft hazard areas, and ship hazard areas for each impacting stage and component in accordance with this section. Requirements for a launch operator's implementation of a hazard area are contained in § 417.121(e) and § 417.121(f) of part 417.

(b) *Hazard area analysis input.* A launch operator shall employ the following inputs to determine each hazard area for the flight of an unguided suborbital rocket:

(1) The launch vehicle downrange, uprange, and crossrange impact dispersion determined in accordance with C417.3 of this appendix.

(2) Latitude and longitude of the nominal impact point of each impacting stage and impacting component determined in accordance with C417.3 of this appendix.

(3) Total propellant weight and propellant type for each rocket stage.

(c) *Methodology for computing a flight hazard area.* A launch operator shall determine a flight hazard area for the flight of an unguided suborbital rocket in accordance with the following:

(1) On the surface of the Earth, a flight hazard area must encompass the blast area surrounding the launch point. A launch operator shall calculate a blast hazard area for an overpressure of 3.0 pounds per square inch that is defined by a circle with the launch point at its center and with a radius R determined using the following equation:

$$R = 20.3\ (NEW)^{1/3}$$

Where:

R is in feet.
NEW = Net explosive weight = W×C
W is the propellant weight in pounds.
C is the TNT equivalency coefficient of the propellant being evaluated. A launch operator shall identify the TNT equivalency of each propellant on its launch vehicle, including any payload. TNT equivalency data for common liquid propellants is provided in tables C417–2. Table C417–3 provides factors for converting gallons of specified liquid propellants to pounds.

(2) In addition to the area on the surface of the Earth determined according to paragraph (c)(1) of this section, for the protection of aircraft, a launch operator's flight hazard area must include an air space region that encompasses the unguided suborbital rocket's three-sigma trajectory dispersion from the Earth's surface at the launch point to an altitude of 60,000 feet.

(d) *Maximum impact range area.* A launch operator shall define a maximum impact range area as a circle with a radius equal to the range of the furthest maximum downrange impact point determined according to C417.3(e).

(e) *Impact hazard areas.* A launch operator shall determine an impact hazard area for each impacting stage and component as depicted in Figure C417–1.

(f) *Planned impact aircraft hazard area.* A launch operator shall employ the methodology described in this paragraph to determine an aircraft hazard area for each planned impact of a launch vehicle stage or component for all suborbital and orbital launches. A launch operator shall compute an aircraft hazard area for each planned impact of a launch vehicle stage or component in accordance with the following:

(1) An aircraft hazard area must be a three dimensional air space region from the Earth's surface to an altitude of 60,000 feet that encompasses, for all altitudes, the larger of the three-sigma drag impact ellipse determined in accordance with C417.3(f)(3) or the ellipse with the same semi-major and semi-minor axis ratio as the impact dispersion, where, if an aircraft were located on the boundary of the ellipse, the probability of hitting the aircraft would be less than or equal to 1×10^{-8} determined in accordance with paragraph (f)(2) of this section. An example aircraft hazard area is illustrated in Figure C417–2. For the launch of an unguided suborbital rocket, if the impact of a stage or component has a three-

sigma dispersion that results in an aircraft hazard area that is prohibitively too large to implement with air traffic control (ATC), a launch operator may employ an alternate aircraft hazard area. A launch operator shall provide a clear and convincing demonstration, through the licensing process, that any alternate aircraft hazard area provides an equivalent level of safety to the requirements of this section based on analysis of the proposed launch and potential air traffic in the impact hazard area.

(2) A launch operator shall determine an aircraft hazard area ellipse where, if an aircraft were located on the boundary of the ellipse, the probability of hitting the aircraft would be less than or equal to 1×10^{-8}. A launch operator shall use the dimensions of the largest aircraft in the vicinity or, if unknown, the dimensions of a Boeing 747 aircraft. A launch operator shall compute an aircraft hazard area to demonstrate the probability of impact in accordance with the following:

(i) Employ the actual speed of the largest aircraft in the vicinity, or assume the aircraft is traveling at mach 0.8 velocity.

(ii) Determine the distance the aircraft travels during the time that the stage or ejected debris falls through a distance equal to twice the length of the debris plus the depth of the aircraft. The aircraft speed, assuming mach 0.8 if unknown, and the time it takes the debris to fall through the depth of the aircraft determine the distance of travel. A launch operator shall use the following equations to make this determination:

$$\beta = \frac{W}{C_d A}$$

$$V_Z = \sqrt{\frac{2g\beta}{\rho}}$$

$$T_a = \left(H_a + 2 \cdot L_R\right) / V_Z$$

$$D_x = V_a \cdot T_a$$

Where:

β is the ballistic coefficient of the stage or ejected debris in pounds per square foot.

W is the weight of the stage or ejected debris in pounds.

A is the area of the stage or ejected debris.

C_d is the coefficient of drag (dimensionless) of the stage or ejected debris.

V_Z is the velocity of the stage or ejected debris in the altitude axis.

g is the gravity constant.

ρ is the density of the atmosphere at the assumed aircraft height in pounds per cubic foot.

T_a is the time that the debris falls through a distance equal to twice the length of the stage or ejected debris plus the depth of the aircraft.

H_a is the depth of the aircraft.

L_R is the length of the stage or ejected debris.

V_a is the aircraft's velocity or 0.8 mach if aircraft velocity is unknown.

D_x is the distance traveled during time T_a.

(iii) The distance of the aircraft from the nominal impact point shall be varied with a constant number of sigma increase in both downrange and crossrange until a probability of impact of $\leq 1 \times 10^{-8}$ is obtained. This shall be accomplished using the following:

$$A_{SA} = D_X \cdot L_a$$

Where:

A_{SA} is the area traveled by the aircraft during T_a

L_a is the distance from wing tip to wing tip of the aircraft.

Start at σ_c = and iterate the following until P_A is less than 1×10^{-8}:

$$\sigma_c = \sigma_c + 0.1$$

$$y = \sigma_y \cdot \sigma_c$$

$$P_A = \frac{A_{SA}}{2\pi\sigma_x\sigma_y} \cdot \left(\exp - \frac{1}{2}\left(\frac{y}{\sigma^2{}_y}\right)^2\right)$$

Repeat the iteration until PA is less than 1×10^{-8}.

Where:

σ_x is the one sigma distance of debris impact in the downrange direction. σ_y is the one sigma distance of debris impact in the crossrange direction.

y is the crossrange distances from the nominal impact point to the assumed position of the aircraft.

P_A is the aircraft impact probability.

(iv) Once P_A is less than 1×10^{-8}, the aircraft hazard area shall be defined by the following elliptical semi axes:

$$\text{xaxis} = \frac{\sigma_x}{\sigma_y} \cdot \sigma_c$$

$$\text{yaxis} = \sigma_c$$

(3) A launch operator shall determine the time period during which an aircraft hazard area must be in effect. The launch operator shall ensure that an aircraft hazard area remains in effect from before liftoff until after the launch vehicle stage or component impact has occurred. The time that the hazard area is in effect, through completion of launch, must be greater than the impact time of the smallest hazardous debris piece.

(g) *Collective ship-hit probability analysis for planned impacts.* A launch operator shall use statistical ship density data to determine the collective ship-hit probability for each planned impacting stage or component, in accordance with the requirements of this paragraph, to determine whether the launch operator must survey the impact area for ships and to determine flight commit criteria. If a launch operator demonstrates that the collective ship-hit probability for an impacting stage or component is less than or equal to 1×10^{-5}, a launch operator shall define a ship hazard area, in accordance with paragraph (h) of this section, for which the launch operator need not perform flight day surveillance. If the launch operator fails to demonstrate that the collective ship-hit probability for an impacting stage or component is less than 1×10^{-5}, the launch operator shall perform either a flight day ship-hit probability computation using actual ship location data obtained through surveillance or define the ship-hit ellipses according to paragraph (i) of this section, which the launch operator shall survey on the day of flight. A launch operator's analysis for determining collective ship-hit probability using statistical ship density data must satisfy the following requirements:

(1) A launch operator's analysis must account for the ship density in the three-sigma impact dispersion ellipse surrounding each planned stage or component drag impact point location determined in accordance with C417.3(f)(3). The launch operator shall establish ship density based on the most recent statistical data from maritime reports, satellite analysis, or U.S. government information. The ship density must account for time of day and any other factors that might affect the ship density. The statistical ship density for the impact dispersion ellipse must be multiplied by a safety factor of 10 for use in the collective ship-hit probability analysis unless the launch operator demonstrates the accuracy of its ship density data, clearly and convincingly through the licensing process, and accounts for the associated ship density error in the collective ship-hit probability analysis.

(2) A collective ship-hit probability analysis must use the ship density determined in accordance with paragraph (g)(1) of this section to compute the collective ship-hit probability that exists within the three-sigma impact dispersion ellipse surrounding the nominal drag impact point. The analysis shall be performed by computing the collective ship-hit probability for a series of points located one nautical mile apart within the three-sigma impact dispersion ellipse. A launch operator may assume symmetry in all four quadrants of the three-sigma impact dispersion ellipse. Therefore, the series of points evaluated need only cover the area within one quadrant of the ellipse. A launch operator shall assume that the number of ships at each grid point is equal to the ship density established as the number of ships per square nautical mile. A launch operator shall employ the following procedure and steps to compute the collective ship-hit probability (P_S):

(i) Set x = 0.5 (nautical miles) and y = 0.5 (nautical miles).

(ii) Compute P_A and P_S using the following equations:

$$P_A = N_S \frac{A_{SA}}{2\pi\sigma_x\sigma_y} \cdot \left(\exp - \frac{1}{2}\left(\left(\frac{x}{\sigma_x}\right)^2 + \left(\frac{y}{\sigma_y}\right)^2 \right)\right)$$

$$P_S = \sum 4 \cdot P_A$$

Where:

P_A is the ship-hit probability for each ship location evaluated.

P_S is the collective ship-hit probability and is a running sum total of P_A for all the ship locations evaluated.

The multiplication factor ''4'' in the equation for P_S accounts for the four quadrants of the ellipse.

N_S is the number of ships per square mile.

σ_x is the one-sigma distance of the debris impact dispersion in the downrange direction in nautical miles.

σ_y is the one-sigma distance of the debris impact dispersion in the crossrange direction in nautical miles.

x and y are the downrange and crossrange distances, respectively, from the nominal impact point to the assumed position of the ship in nautical miles.

A_{sa} is the area of the N_S ships in square nautical miles. A launch operator shall assume a ship size of 120,000 square feet, unless the launch operator provides a clear and convincing demonstration that a smaller ship size is the greatest ship size in the vicinity of the planned impact.

(iii) If the current value of y is equal to or less than the crossrange distance to the three-sigma impact dispersion ellipse for the current downrange value of x, increase y by 1 nautical mile and repeat step (ii).

(iv) If the current value of y is greater than the crossrange distance to the three-sigma impact dispersion ellipse for the current downrange value of x, reset y to 0.5 nautical miles.

(v) If the current value of x is equal to or less than the downrange distance to the three-sigma impact dispersion ellipse for the crossrange value of 0.5 nautical miles, increment x by 1 nautical mile and repeat steps (ii) through (iv).

(vi) If the current value of x is greater than the downrange distance to the three-sigma impact dispersion ellipse for the crossrange value of 0.5 nautical miles, the computation of P_S for the planned impact is complete.

(h) *Ship hazard areas, surveillance not required.* If the analysis required by paragraph (g) of this section demonstrates, using statistical ship density data, that the collective ship-hit probability is less than 1×10^{-5} for a planned impacting rocket stage or component, ship surveillance is not required for that impact. The ship hazard area must consist of an area centered on the drag impact point and defined by a three-sigma impact dispersion ellipse or the ship-hit ellipse for one ship determined according to paragraph (i)(2) of this section, whichever ellipse is larger. A launch operator shall ensure that a notice for each ship hazard area is disseminated according to § 417.121(e).

(i) *Ship hazard areas, surveillance required.* If a launch operator is unable to demonstrate, using statistical ship density data, that the collective ship-hit probability for a planned impacting rocket stage or component is less than 1×10^{-5} in accordance with paragraph (g) of this section, a launch operator shall either compute the flight day ship-hit probability of hitting any ship surveyed in the vicinity of the planned impact location according to paragraph (i)(1) of this section or the launch operator shall determine and implement ship-hit ellipses according to paragraph (i)(2) of this section.

(1) *Flight day ship-hit probability computation.* When computing ship-hit probability on the day of flight, a launch operator shall compute of the probability of hitting any ship surveyed in the vicinity of a planned impact location. A launch operator's ship-hit computation must account for the locations of all ships within a five-sigma dispersion on the day of flight within 30 minutes of flight. The analysis must account for the changes in impact locations resulting from the launch day wind weighting operations, the speed of each ship in the vicinity of the impact area, and the ships' predicted location at the time of liftoff. The analysis must demonstrate that the collective probability of hitting a ship during flight is less than 1×10^{-5}. The analysis shall use the following equations to compute the collective ship hit probability for all ships located within a five-sigma dispersion of the impact point.

$$P_A = \frac{A_{SA}}{2\pi\sigma_x\sigma_y} \cdot \left(\exp - \frac{1}{2}\left(\left(\frac{x}{\sigma_x}\right)^2 + \left(\frac{y}{\sigma_y}\right)^2 \right)\right)$$

$$P_S = \sum P_A$$

Where:

P_S is the collective ship-hit risk.

P_A is the individual ship-hit risk.

σ_x is the one sigma distance of debris impact dispersion in the downrange direction.

σ_y is the one sigma distance of debris impact dispersion in the crossrange direction.

x and y are the downrange and crossrange distances from the nominal impact point to the assumed position of the ship.

A_{sa} is the area of the ship. A launch operator shall assume a ship size of 120,000 square feet unless the launch operator provides a clear and convincing demonstration that a smaller ship size is the greatest ship size in the vicinity of the planned impact.

(2) *Ship-hit ellipses.* When implementing ship-hit ellipses for a planned impacting rocket stage or component, a launch operator shall compute ship-hit ellipses in accordance with the following:

(i) For each planned impact, a launch operator shall compute ship-hit ellipses for one to 10 ships in increments of one ship. For a given number of ships, the associated ship-hit ellipse must encompass an area around the nominal drag impact point where if the ships were located on the boundary of the ellipse, the probability of impacting one of the ships would be less than or equal to 1×10^{-5}.

(ii) A ship-hit ellipse must have the same semi-major and semi-minor axis ratio as the dispersion of the impacting rocket stage or component.

(iii) When computing a ship-hit ellipse, a launch operator shall assume a ship size of 120,000 square feet unless the launch operator provides a clear and convincing demonstration that a smaller ship size is the greatest ship size in the vicinity of the planned impact.

(iv) For a given number of ships, the distance of each ship from the nominal impact point shall be varied with a constant number of sigma increase in crossrange until a hit probability of $\leq 1\times10^{-5}$ obtained. This shall be accomplished by:

Starting at ($\sigma_C = 0$ and iterating the following until P_S is less than 1×10^{-5}:

$$\sigma_c = \sigma_c + 0.1$$

$$y = \sigma_y \cdot \sigma_c$$

$$P_S = N_S \frac{A_S}{2\pi\sigma_x\sigma_y} \exp\left(-\frac{1}{2}\left(\frac{y}{\sigma_y}\right)^2\right)$$

Repeat the iteration until P_S is less than 1×10^{-5}.

Where:

σ_y is the one sigma distance of debris impact dispersion in the crossrange direction.

y is the crossrange distance from the nominal impact point to the assumed position of the ship.

(v) Once P_S is less than 1×10^5, the ship hazard contour is defined by the following elliptical semi axis:

$$xaxis = \frac{\sigma_x}{\sigma_y} \cdot \sigma_c$$

$$yaxis = \sigma_c$$

(3) *Implementation of ship-hit methods.* The launch operator's operational methods for implementing either the ship-hit ellipse method or the flight day ship-hit probability computation method must account for the changing impact points resulting from launch day wind weighting operations. Although the last vehicle stage wind impact point is targeted for the nominal impact point, the impact points for each intermediate stage and planned ejected debris will change due to winds. The launch operator shall develop operational methods flight commit criteria to account for the changing impact locations.

(4) *Notice of ship hazard areas.* When employing the ship-hit ellipse method or the flight day ship-hit probability computation method a launch operator shall ensure that a notice of ship hazard areas is disseminated according to § 417.121(e). For the purpose of the notices, a launch operator shall use an area centered on the drag impact point and defined by a three-sigma impact dispersion ellipse or the ship-hit ellipse for one ship determined according to paragraph (i)(2) of this section, whichever ellipse is larger.

(j) *Hazard area analysis products.* A launch operator shall submit the following products of a hazard area analysis for an unguided suborbital rocket to the FAA in accordance with § 417.235(c):

(1) A description of the methodology used to determine each hazard area.

(2) For each hazard area, each source of input data, and a sample of each calculation used to determine the hazard area.

(3) A graphic depiction of each hazard area displaying the centroid of ellipses and lengths of semi-major and semi-minor axes. The graphical depiction of the maximum impact range area and impact hazard area must also include geographical features of the surrounding area.

(4) A description of the methods used to survey for ships and the safety reporting and evaluation of the ship-hit risk.

(5) A description and justification for the source of the ship density data, a description of the method used to compute the collective risk for the three-sigma area about each nominal drag impact point, and the results of the collective ship-hit risk analysis.

C417.7 Wind Weighting Analysis

(a) *General.* As part of a wind weighting safety system, a launch operator shall perform a wind weighting analysis to determine launcher azimuth and elevation settings that correct for the windcocking and wind-drift effects on an unguided suborbital rocket due to forecasted winds in the airspace region of flight. A launch operator's wind weighting safety system and its operation must be in accordance with § 417.125(c). The launch azimuth and elevation settings resulting from a launch operator's wind weighting analysis must produce a trajectory, under actual wind conditions, that results in a final stage drag impact point that is the same as the final stage's nominal drag impact point determined according to C417.3(d).

(b) *Wind weighting analysis constraints.* A launch operator's wind weighting analysis must incorporate the following constraints:

(1) A wind weighting analysis must account for the winds in the airspace region through which the rocket will fly. A launch operator's wind weighting safety system must include an operational method of determining the winds at all altitudes that the rocket will reach up to the maximum altitude defined by dispersion analysis in accordance with C417.3.

(2) A wind weighting analysis must account for an estimation of the uncorrected wind errors that result from the analytical and operational methods employed, including the error resulting from the time between wind measurements.

(3) A wind weighting analysis must account for the dispersion of all impacting debris, including any uncorrected wind error accounted for in the trajectory analysis performed in accordance with C417.3.

(4) A wind weighting analysis must establish flight commit criteria that are a function of the analysis and operational methods employed and reflect the maximum wind velocities and wind variability for which the results of the wind weighting analysis are valid.

(5) A wind weighting analysis must account for the wind effects during each thrusting phase of an unguided suborbital rocket's flight and each ballistic phase of each rocket stage and component until burnout of the last stage.

(6) A wind weighting analysis must account for all errors due to the methods used to measure the winds in the airspace region of the launch, delay associated with wind measurement, and the method used to model the effects of winds. The resulting sum of these error components must be no greater than those used as the wind error dispersion parameter in the launch vehicle trajectory analysis defined in C417.3.

(7) A launch operator shall determine the impact point location for any parachute recovery of a stage or component. The launch operator's wind weighting analysis shall account for any parachute impact or the launch operator shall perform a wind drift analysis to determine the parachute impact point.

(8) A launch operator shall perform a wind weighting analysis using a six-degrees-of-freedom (6–DOF) trajectory simulation that targets an impact point using an iterative process. The resulting trajectory data must account for the performance error parameters used in the trajectory analysis performed according to C417.3. The 6–DOF simulation must account for launch day wind direction and wind magnitude as a function of altitude.

(9) A launch operator shall perform a wind weighting analysis using a computer program or other method of editing wind data, recording the time the data was obtained, and recording the balloon number or identification of any other measurement device used for each wind altitude layer.

(c) *Methodology for performing a wind weighting analysis.* A launch operator's method for performing a wind weighting analysis on the day of flight must incorporate the following:

(1) A launch operator shall measure the winds on the day of flight to determine wind velocity and direction. A launch operator's process for measuring winds must provide wind data that is consistent with the launch operator's trajectory and drag impact point dispersion analysis and any assumptions made in that analysis regarding the actual wind data available on the day of flight. Wind measurements shall be made at altitude increments that do not exceed 200 feet and that are consistent with the launch operator's drag impact point dispersion analysis. Winds shall be measured from the ground level at the launch point to a maximum altitude that is consistent with the launch operator's drag impact point dispersion analysis. The maximum wind measurement altitude must be the apogee of the flight or 90,000 feet, whichever is lower. A launch operator's wind measuring process must employ the use of balloons and radar tracking or balloons fitted with a Global Positioning System transceiver, and must incorporate the following unless the launch operator demonstrates clearly and convincingly, through the licensing process, that an alternate wind measuring approach provides an equivalent level of safety:

(i) Measure winds for the range of altitudes from ground level to the maximum altitude within six hours before flight and after any weather front passes the launch site before liftoff. Wind measurements shall be continued up to the maximum altitude whenever the wind measurements, for any given altitude, from a subsequent balloon release are not consistent with the wind measurements, for the same altitude, from an earlier higher altitude balloon release.

(ii) Measure winds for the range of altitudes from ground level to an altitude of not less than 50,000 feet within four hours before flight and after any weather front passes the launch site before liftoff. Wind measurements to the 50,000-foot altitude shall be repeated whenever the wind measurements, for any given altitude, from a subsequent lower altitude balloon release are not consistent with the wind measurements, for the same altitude, from the 50,000-foot balloon release.

(iii) Measure winds for the range of altitudes from ground level to an altitude of no less than 5,000 feet twice within 30 minutes of liftoff.

(2) A launch operator shall perform runs of the 6–DOF trajectory simulation using the flight day measured winds as input and targeting for the nominal final stage drag impact point. In an iterative process, vary the launcher elevation angle and azimuth angle settings for each simulation run until the nominal final stage impact point is achieved. The launch operator shall use the resulting launcher elevation angle and azimuth angle settings to correct for the flight day winds. The launch operator shall not initiate flight unless the launcher elevation angle and azimuth angle settings after wind weighting are in accordance with the following:

(i) The launcher elevation angle setting resulting from the wind weighting analysis must not exceed ±5° from the nominal launcher elevation angle setting and must not exceed a total of 86°. A launch operator's nominal launcher elevation angle setting must be in accordance with § 417.125(c)(3).

(ii) The launcher azimuth angle setting resulting from the wind weighting analysis must not exceed ± 30° from the nominal launcher azimuth angle setting unless the launch operator demonstrates clearly and convincingly, through the licensing process, that its unguided suborbital rocket has a low sensitivity to high wind speeds and the launch operator's wind weighting analysis and wind measuring process provide an equivalent level of safety.

(3) Using the trajectory produced in paragraph (c)(2) of this section, for each intermediate stage and planned ejected component, compute the impact point that results from wind drift by performing a run of the 6–DOF trajectory simulation with the launcher angles determined in paragraph (c)(2) of this section and the flight day winds from liftoff until the burnout time or ejection time of the stage or ejected component. The resulting impact point(s) must be accounted for when performing flight day ship-hit operations defined in C417.5(i).

(4) If a parachute is used for any stage or component, a launch operator shall determine the wind drifted impact point of the stage or component using a 6–DOF trajectory simulation that incorporates modeling for the change in aerodynamics at parachute ejection. This simulation run is performed in addition to any simulation of spent stages without parachutes.

(5) A launch operator shall verify that the launcher elevation angle and azimuth angle settings at the time of liftoff are the same as required by the wind weighting analysis.

(6) A launch operator shall monitor and verify that any wind variations and maximum wind limits at the time of liftoff are within the flight commit criteria established according to § 417.113(b).

(7) A launch operator shall generate output data from its wind weighting analysis for each impacting stage or component in printed, plotted, or computer medium format. This data shall be made available to the FAA upon request and must include:

(i) Wind measurement data resulting from each wind weighting balloon.

(ii) The results of each computer run made using the data from each wind weighting balloon, including but not limited to, launcher settings, and impact locations for each stage or component.

(iii) Any anemometer data recorded.

(iv) Final launcher settings recorded.

(d) *Wind weighting analysis products.* The products of a launch operator's wind weighting analysis to be submitted to the FAA in accordance with § 417.235(g) must include the following:

(1) A launch operator shall submit a description of its wind weighting analysis methods, including its method and schedule of determining wind speed and wind direction for each altitude layer.

(2) A launch operator shall submit a description of its wind weighting safety system and identify all equipment used to perform the wind weighting analysis, such as any wind towers, balloons, or Global Positioning System wind measurement system employed and the type of trajectory simulation employed.

(3) A launch operator shall submit a sample wind weighting analysis using actual or statistical winds for the launch area and provide samples of the output required in paragraph (c)(7) of this section.

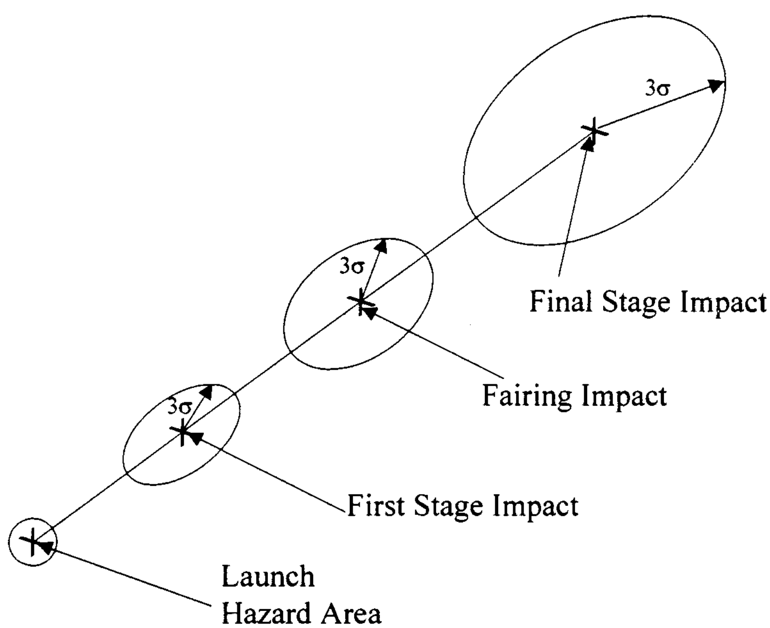
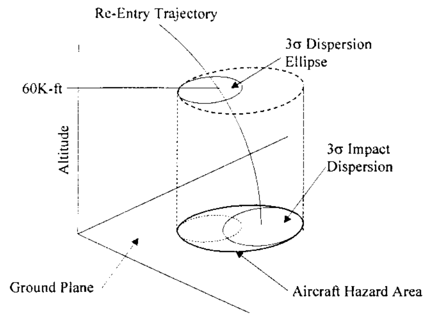


Figure C417-1, Illustration of Planned Impact Hazard Areas



Re-Entry Trajectory Hazard Volume

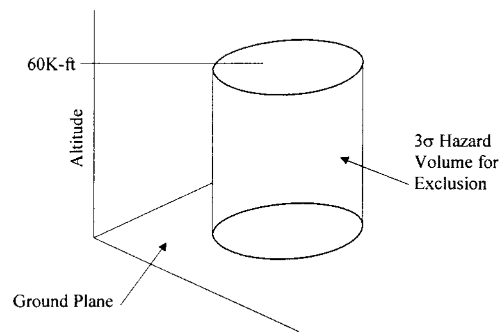


Figure C417-2, Illustration of a Planned Impact Aircraft Hazard Area

TABLE C417–2.—LIQUID PROPELLANT EXPLOSIVE EQUIVALENTS

Propellant Combinations:	
LO_2/LH_2	The larger of $8W^{2/3}$ or 14% of W. Where W is the weight of LO_2/LH_2.
LO_2/LH_2 + LO_2/RP–1	Sum of (20% for LO_2/RP–1) + the larger of: $8W^{2/3}$ or 14% of W. Where W is the weight of LO_2/LH_2.
LO_2/RP–1	20% of W up to 500,000 pounds Plus: 10% of W over 500,000 pounds, Where W is the weight of LO_2/RP–1.
N_2O_4/N_2H_4 (or UDMH or UDMH/N_2H_4 Mixture)	10% of W, Where W is the weight of the propellant.

TABLE C417–3.—PROPELLANT HAZARD AND COMPATIBILITY GROUPINGS AND FACTORS TO BE USED WHEN CONVERTING GALLONS OF PROPELLANT INTO POUNDS

Propellant	Hazard group	Compatibility group	Pounds/gallon	°F
Hydrogen Peroxide	II	A	11.6	68
Hydrazine	III	C	8.4	68
Liquid Hydrogen	III	C	0.59	−423
Liquid Oxygen	II	A	9.5	−297
Nitrogen Tetroxide	I	A	12.1	68
RP–1	I	C	6.8	68
UDMH	III	C	6.6	68
UDHM/Hydrazine	III	C	7.5	68

Appendix D to Part 417—Flight Termination System Components and Circuitry

D417.1 General

(a) This appendix contains requirements that are common to flight termination system components and circuitry and requirements that apply to specific components. A launch operator shall ensure that the flight termination system used in flight satisfies the system level requirements provided in part 417, subpart D and meets the component and circuitry requirements contained in this appendix unless the launch operator demonstrates, clearly and convincingly through the licensing process, that an alternative provides an equivalent level of safety.

(b) The design of each flight termination system component must provide for the component to be tested in accordance with appendix E of this part.

(c) A launch operator shall ensure that compliance with each requirement in this appendix is documented as part of a safety review document prepared during the licensing process according to § 415.107 of this chapter. A licensee shall submit any change to the FAA for approval as a license modification.

D417.3 Design Environments

(a) *General.* The design of each component must provide for the component to accomplish its intended function when subjected to the non-operating and operating environments defined in this section. This section defines the component design environments and the design margins above the maximum predicted environment levels. A launch operator shall establish maximum predicted environment levels according to § 417.307(b) of this part.

(b) *Thermal environment.* The design of a component must provide for the component to function without degradation in performance when exposed to preflight and flight thermal cycle environments. Each thermal cycle, from ambient temperature to one extreme of the required thermal range and then to the other extreme and then back to ambient temperature, must be continuous. The required design thermal range and number of cycles for a component must be in accordance with the following:

(1) *Passive components.* Unless otherwise permitted, the design of a passive component must provide for the component to function without degradation in performance when subjected to eight thermal cycles from one extreme of the maximum predicted thermal range to the other extreme and 24 thermal cycles at temperature extremes of 10 °C lower to 10 °C higher than the maximum predicted thermal range, or from −34 °C to +71 °C, whichever is more severe, with a one hour dwell time at each temperature extreme. The thermal rate of change must be no less than the greater of the maximum predicted thermal rate of change or 1 °C per minute.

(2) *Electronic components.* An electronic flight termination system component is any component that contains active electronic piece parts such as microcircuits, transistors, and diodes. The design of an electronic component must provide for the component to function without degradation in performance when subjected to 18 thermal cycles from one extreme of the maximum predicted thermal range to the other extreme and when subjected to 24 thermal cycles at temperature extremes of 10 °C lower to 10 °C higher than the maximum predicted thermal range, or from −34 °C to +71 °C, whichever is more severe, with a one hour dwell time at each temperature extreme. The thermal rate of change must be no less than the greater of the maximum predicted thermal rate of change or 1 °C per minute.

(3) *Power source thermal design.* The design of a flight termination system power source, including any battery, must provide for the power source to function within its performance specification when exposed to preflight and flight thermal environments. The thermal rate of change must be no less than the greater of the maximum predicted thermal rate of change or 1 °C per minute. The thermal range and number of cycles must be in accordance with the following:

(i) A silver zinc battery must perform within its performance specification when subjected to eight thermal cycles at 10 °C lower to 10 °C higher than its maximum predicted temperature range with a one-hour dwell time at each temperature extreme.

(ii) A nickel cadmium battery must perform within its performance specification when subjected to 24 thermal cycles at 10 °C lower to 10 °C higher than its maximum predicted temperature range or a qualification workmanship screening temperature range of −20 °C to +40 °C, whichever is more severe, with a one-hour dwell time at each temperature extreme.

(iii) All other power sources must perform within their performance specifications when subjected to 24 thermal cycles at 10 °C lower to 10 °C higher than the maximum predicted temperature range with a one-hour dwell time at each temperature extreme.

(4) *Electro-mechanical safe and arm devices with internal explosives.* The design of a safe and arm device must provide for it to function without degradation in performance when subjected to eight thermal cycles from one extreme of the maximum predicted thermal range to the other extreme and when subjected to 24 thermal cycles at temperature extremes of 10 °C lower to 10 °C higher than the maximum predicted thermal range, or from −34 °C to +71 °C, whichever is more severe. The dwell time at each temperature extreme shall last for one hour. The thermal rate of change must be no less than the greater of the maximum predicted thermal rate of change or 1 °C per minute.

(5) *Ordnance thermal design.* The design of an ordnance device and any associated hardware must provide for the ordnance device to withstand eight thermal cycles from extremes of 10 °C lower to 10 °C higher than the maximum predicted thermal range, or from −54 °C to +71 °C, whichever is more severe, with a two hour dwell time at each temperature extreme. Thermal rate of change must be no less than the maximum predicted thermal rate of change or 3 °C per minute whichever is greater.

(c) *Random vibration.* The design of a component must provide for the component to function without degradation in performance when exposed to a composite vibration level profile consisting of the higher of 6 dB above the maximum predicted flight random vibration level or a $12.2G_{rms}$ workmanship screening level, across the 20 Hz to 2000 Hz spectrum of the two levels. The design must provide for the component to function without degradation in performance when exposed to three times the maximum predicted random vibration duration time or three minutes per axis, whichever is greater, on each of three mutually perpendicular axes and where the frequency ranges from 20 Hz to 2000 Hz.

(d) *Sinusoidal vibration.* The design of a component must provide for the component to function without degradation in performance when exposed to 6 dB above the maximum predicted flight sinusoidal vibration level. The design must provide for the component to function without degradation in performance when exposed to three times the maximum predicted sinusoidal vibration duration time on each of three mutually perpendicular axes and where the frequency ranges from 50% lower to 50% greater than the maximum predicted frequency range.

(e) *Transportation vibration.* The design of a component must provide for the component to function without degradation in performance when exposed to 6 dB above the maximum predicted transportation vibration level to be experienced when the component is in the configuration in which it is transported, with an exposure of three times the maximum predicted transportation exposure time. A component must also withstand, without degradation in performance, the workmanship screening vibration levels and duration required by E417.9(f) of appendix E.

(f) *Pyrotechnic shock.* The design of a flight termination system component must provide for the component to function without degradation in performance when exposed to a force of 6 dB above the maximum predicted pyrotechnic shock level to be experienced during flight or a workmanship screening force of 1300 G, whichever is greater. The design must provide for the component to function without degradation in performance after three shocks performed for each of three mutually perpendicular axes, for each direction, positive and negative and where the shock frequency response ranges from 100 Hz to 10,000 Hz.

(g) *Transportation shock.* The design of a flight termination system component must provide for the component to function without degradation in performance after being exposed to the maximum predicted shock to be experienced during transportation while in the configuration in which it is transported.

(h) *Bench handling shock.* The design of a flight termination system component must provide for the component to function without degradation in performance after being exposed to the maximum predicted shock to be experienced during handling in its unpacked configuration.

(i) *Acceleration environment.* The design of a flight termination system component must provide for the component to function without degradation in performance when exposed to launch vehicle breakup acceleration levels of G-forces or twice the maximum predicted flight acceleration levels, whichever is greater. The design must provide for the component to function without degradation in performance when exposed to three times the maximum predicted acceleration duration for each of three mutually perpendicular axes.

(j) *Acoustic environment.* The design of a flight termination system component must provide for the component to function without degradation in performance when exposed to 6 dB above the maximum predicted sound pressure level. The design must provide for the component to function without degradation in performance when exposed to three times the maximum predicted sound pressure duration time or three minutes, whichever is greater for each of three mutually perpendicular axes. The frequency range shall be from 20 Hz to 2000 Hz.

(k) *Other environments.* The design of a flight termination system component must provide for the component to function without degradation in performance after being subjected to temperature, humidity, salt fog, dust, fungus, explosive atmosphere, and electromagnetic energy environments where applicable to flight termination system transportation, storage, pre-flight processing, or preflight system testing and any other environment to which the component could be exposed.

D417.5 Flight Termination System Electrical Components and Electronic Circuitry

(a) *General.* A launch operator's flight termination system must employ electrical components and electronic circuitry that are designed in accordance with this section in addition to meeting the requirements contained in this appendix for specific components.

(b) *Electronic piece parts.* Piece-parts used in electrical components and electronic circuitry must satisfy appendix F of this part.

(c) *Over and under input voltage protection.* A flight termination system component must function reliably and not sustain damage when subjected to the maximum input voltage of the open circuit voltage of its power source and when subjected to the minimum input voltage of the loaded voltage of the power source.

(d) *Series redundant circuit.* A flight termination system component that uses series redundant branches in a firing circuit to satisfy the prohibition against a single failure point must possess monitoring circuits or test points for verifying the integrity of each redundant branch during testing performed after assembly in accordance with appendix E of this part.

(e) *Power control and switching.* In the event of an input power dropout, a power control or switching circuit, including solid-state power transfer switches and arm and enable circuits, must not change state for 50 milliseconds or more. Any electromechanical, solid-state, or relay component used in a flight termination system firing circuit must be capable of delivering the maximum firing current for no less than 10 times the duration of the intended firing pulse.

(f) *Circuit isolation, shielding, and grounding.* The circuitry of a flight termination system component must be shielded, filtered, grounded, or otherwise isolated to preclude any energy sources, internal or external to the launch vehicle, such as electromagnetic energy, static electricity, or stray electrical currents from causing interference that would inhibit the flight termination system from functioning or cause an undesired output of the system. An electrical firing circuit must have a single point ground connection direct to the power source only.

(g) *Circuit protection.* Any circuit protection provided within a flight termination system must be in accordance with the following:

(1) Electronic circuitry must not contain fuses or other similar protection devices. A destruct circuit may employ current limiting resistors.

(2) For any electronic circuit designed to shut down or disable a launch vehicle engine and that interfaces with launch vehicle functions, a launch operator must protect the circuit from over-current including any direct short. This protection must be accomplished through the use of fuses, circuit breakers, or limiting resistors.

(3) The design of a flight termination system output circuit that interfaces with other launch vehicle circuits must prevent any launch vehicle circuit failure from disabling or degrading the flight termination system's performance.

(h) *Repetitive functioning.* All circuitry, elements, components and subsystems of a flight termination system must be capable of withstanding, without degradation in performance, repetitive functioning for five times the expected number of cycles required for acceptance, checkout and operations including re-tests caused by schedule or other delays.

(i) *Watchdog circuits.* Watchdog circuits that automatically shutdown or disable circuitry when specific parameters are violated must not be used in a flight termination system or component except under the provisions of D417.1(a).

(j) *Self-test capability.* If a flight termination system component uses a microprocessor, the component and the microprocessor must be designed to perform self-tests, detect errors, and relay the results through telemetry during flight to the launch operator. The execution of a self-test must not inhibit the intended processing function of the unit or cause any output to change.

(k) *Electromagnetic interference protection.* The design of a flight termination system component must eliminate the possibility of the maximum predicted electromagnetic interference emissions or susceptibilities, whether conducted or radiated, from affecting the component's performance. A launch operator shall ensure that the electromagnetic interference susceptibility level of a component provides for the component to function without degradation in performance when subjected to the maximum predicted emission levels of all other launch vehicle components and external sources to which the component would be exposed.

(l) *Ordnance initiator circuits.* The design of any ordnance initiator circuit that is part of a flight termination system must be in accordance with the following:

(1) An ordnance initiator circuit must deliver an operating current of at least 150% of the initiator's all-fire qualification current level when operating at the lowest battery voltage and under the worse case system tolerances allowed by the system design limits.

(2) For a low voltage ordnance initiator with an electro-explosive device that initiates at less than 50 volts, the initiator's circuitry must limit the power at each associated electro-explosive device that could be produced by an electromagnetic environment to a level at least 20 dB below the pin-to-pin direct current no-fire power of the electro-explosive device.

(3) For a high voltage ordnance initiator that initiates ordnance at greater than 1000 volts, safe and arm plugs must be used to interrupt power to the main initiator's charging circuits, such as the trigger and output capacitors. The design of a high voltage initiator's circuitry must ensure that the power that could be produced at the initiator's command input by an electromagnetic environment is limited to no greater than 20 dB below the initiator's firing level.

D417.7 Flight Termination System Monitor, Checkout, and Control Circuits

(a) All monitor, checkout, and control circuits must take their measurement directly from the parameter being monitored. A launch operator shall ensure that the monitor circuits monitor the parameters required by § 417.321(a).

(b) All monitor, control and checkout circuits must be independent of any firing circuit. A monitor, control, or and checkout circuit must not share a connector with a firing circuit.

(c) No monitor, checkout, or control circuit may be routed through a safe and arm plug.

(d) Any monitor and checkout current in an electro-explosive device system firing line must not exceed one-tenth of the no-fire current of the electro-explosive device.

(e) Resolution, accuracy, and data rates for each monitoring circuit must allow for detecting when specifications are exceeded and detecting out-of-family conditions. A launch operator shall ensure that resolution, accuracy, data rates, and maximum and minimum values are specified for each flight termination system parameter monitored.

D417.9 Flight Termination System Ordnance Train

(a) An ordnance train must consist of all components responsible for initiation, transfer and output of an explosive charge. Ordnance train components must include, but need not be limited to, initiators, energy transfer lines, boosters, explosive manifolds, and destruct charges.

(b) The reliability of an ordnance train to initiate ordnance, including the ability to propagate a charge across any ordnance interface, must be 0.999 at a 95% confidence level.

(c) The decomposition, cook-off, sublimation, auto-ignition, and melting temperatures of all flight termination system ordnance must be at least 30°C higher than the maximum predicted environmental temperature to which the material will be exposed during storage, handling, installation, transportation, and flight.

(d) An ordnance train must include initiation devices that can be connected or removed from the destruct charge as late in the launch countdown as possible. The design of an ordnance train must provide for easy access to the initiation devices.

D417.11 Radio Frequency Receiving System

(a) *General.* A radio frequency receiving system must include each flight termination system antenna and radio frequency coupler and any radio frequency cable or other passive device used to connect a flight termination system antenna to a command receiver. A radio frequency receiving system must deliver command control system radio frequency energy within its performance specification to each flight termination system command receiver when subjected to performance degradation caused by command control system transmitter variations, non-nominal launch vehicle flight conditions, and flight termination system hardware performance variations.

(b) *Sensitivity.* A radio frequency receiving system must provide command signals to each command receiver decoder at an electromagnetic field intensity of 12dB above the level required for reliable receiver operation. The 12dB margin must be met over 95% of the antenna radiation sphere surrounding the launch vehicle when accounting for command control system radio frequency transmitter characteristics and path loses due to atmospheric conditions, plume attenuation, aspect angle, and any other attenuation factor. The 12dB margin must be met at any point along the launch vehicle trajectory where the flight safety system is required to work.

(c) *Testing.* A radio frequency receiving system shall be tested in accordance with E417.17 of appendix E of this part. The design of a radio frequency receiving system must provide for acquisition of the test data that verifies the functional performance of the radio frequency receiving system.

(d) *Antenna.* Each flight termination system antenna must be in accordance with the following:

(1) The design of a flight termination system antenna must provide for a radio frequency bandwidth that exceeds two times the total combined maximum tolerances of all applicable radio frequency performance factors. The performance factors must include frequency modulation deviation of multiple tones, command control transmitter inaccuracies, and variations in hardware performance during thermal and dynamic environments.

(2) Any thermal protection used on a flight termination system antenna is part of the antenna and must be subjected to all the antenna system requirements for design, test, and antenna pattern measurement.

(3) A flight termination system antenna must be compatible with the command control system transmitting equipment.

(e) *Radio frequency coupler.* A launch operator shall use a passive radio frequency coupler to combine radio frequency signals inputs from each flight termination system antenna and distribute the required signal level to each command receiver. The FAA will evaluate the use of any active radio frequency coupler on a case-by-case basis. A radio frequency coupler shall be in accordance with the following:

(1) The design of a radio frequency coupler must provide for the elimination of any single point failure in one redundant command receiver or antenna from affecting any other redundant command receiver or antenna. This shall be accomplished by providing isolation between each port. A launch operator shall ensure that each input port is isolated from all other input ports, each output port is isolated from all other output ports and that all input ports are isolated from all output ports such that an open or short circuit in one redundant command destruct receiver or antenna path will not prevent the functioning of the other command destruct receiver or antenna path.

(2) The design of a radio frequency coupler must provide for a radio frequency bandwidth that exceeds two times the total combined maximum tolerances of all applicable radio frequency performance factors. The performance factors must include frequency modulation deviation of multiple tones, command control transmitter inaccuracies, and variations in hardware performance during thermal and dynamic environments.

D417.13 Electronic Components

(a) *General.* The requirements in this section apply to all command receiver decoders and any other electronic component that contains piece-part circuitry and is part of a flight termination system. Piece-parts used in an electronic component must be in accordance with appendix F of this part.

(b) *Response time.* Each electronic component's response time must be such that the total flight termination system response time, from receipt of a destruct command sequence to initiation of destruct output, is less than or equal to the response time used in the time delay analysis required by § 417.223(b)(3).

(c) *Wire and connectors.* All wire and connectors used in an electronic component must be in accordance with D417.17 of this appendix.

(d) *Adjustment.* An electronic component must not require any adjustment after successful completion of acceptance testing.

(e) *Self-test.* The design of an electronic component that uses a microprocessor must provide for the component to perform a self-test, detect errors, and relay the results through telemetry during flight to the launch operator. The execution of a self-test must not inhibit the intended processing function of the unit or cause any output to change state.

(f) *Electronic component repetitive functioning.* The design of an electronic component including all circuitry and parts must provide for the electronic component to withstand, without degradation in performance, repetitive functioning for five times the total expected number of cycles required for acceptance tests, pre-flight tests, and flight operations, including an allowance for potential retests due to schedule delays.

(g) *Acquisition of test data.* An electronic component shall be tested according to appendix E of this part. The design of an electronic component must allow for separate component testing and the recording of parameters that verify its functional performance, including the status of any command output, during testing.

(h) *Warm-up time.* Each electronic component's warm-up time, that ensures reliable operation, must be less than or equal to the warm-up time that is incorporated into the preflight testing performed for each countdown according to § 417.317(h)(4).

(i) *Electronic component circuit protection.* The design of an electronic component must provide circuit protection for power and control circuitry, including switching circuitry, that ensures the component does not degrade in performance when subjected to launch processing and flight environments. An electronic component's circuit protection must be in accordance with the following:

(1) Circuit protection must provide for an electronic component to function without degradation in performance when subjected to the maximum input voltage of the open circuit voltage of the component's power source and when subjected to the minimum input voltage of the loaded voltage of the power source.

(2) In the event of an input power dropout, any control or switching circuit critical to the reliable operation of a component, including solid-state power transfer switches, must not change state for at least 50 milliseconds.

(3) Watchdog circuits that automatically shutdown or disable an electronic component when specific parameters are violated must not be used except under the provisions of D417.1(a).

(4) The performance of an electronic component must not degrade when any of its monitoring circuits or nondestruct output ports are subjected to a short circuit or the highest positive or negative voltage capable of being supplied by the monitor batteries or other power supplies.

(5) An electronic component must function without degradation in performance when subjected to any undetectable reverse polarity voltage that can occur during launch processing.

(j) *Electromagnetic interference susceptibility.* The design of an electronic component must eliminate the possibility of electromagnetic interference or modulated or unmodulated radio frequency emissions from affecting the component's performance. These electromagnetic interference and radio frequency environments include emissions or susceptibilities, whether conducted or radiated.

(1) A launch operator shall ensure that the susceptibility level of an electronic component is below the emissions of all other launch vehicle components and external transmitters.

(2) Any electromagnetic emissions from an electronic component must not be at a level that would affect the performance of other flight termination system components.

(3) An electronic component must not produce inadvertent command outputs when subjected to potential external radio frequency sources and modulation schemes to which the component could be subjected prior to and during flight.

(k) *Output functions and monitoring.* The design of an electronic component must provide for the following output functions and monitoring:

(1) Each series redundant branch in any firing circuit of an electronic component that prevents a single failure point from issuing a destruct output must include a monitoring circuit or test points that verify the integrity of each redundant branch after assembly.

(2) Any piece-part used in a firing circuit must have the capacity to output at least 1.5 times the maximum firing current for no less than 10 times the duration of the maximum firing pulse.

(3) An electronic component's destruct output circuit and all its parts must have the capacity to deliver output power to the intended output load while operating with

any input voltage that is within the component's input power operational design limits.

(4) An electronic component must include monitoring circuits that provide for monitoring the health and performance of the component including the status of any command output.

(5) The maximum leakage current through an electronic component's destruct output port must not degrade the performance of down-string circuitry or ordnance initiation systems or result in inadvertent initiation of ordnance.

D417.15 Command Receiver Decoder

(a) *General.* A command receiver decoder must function when subjected to performance degradation caused by command control system transmitter variations and non-nominal launch vehicle flight. This shall be accomplished in accordance with the requirements of this section.

(b) *Electronic component.* A command receiver decoder must be in accordance with the requirements for all electronic components provided in D417.13 of this appendix.

(c) *Radio frequency processing.* Radio frequency processing circuitry within a command receiver decoder must provide for the command receiver decoder to function in the flight radio frequency environment in accordance with the following:

(1) A command receiver decoder must function at the command control system transmitter frequency to be used during flight. A command receiver decoder must function according to its performance specifications at twice the worst-case command control system transmitter frequency modulation variations.

(2) The lowest guaranteed radio frequency sensitivity of a command receiver decoder must be in accordance with the 12dB link margin provided by the radio frequency receiving system as required by D417.11(b). A command receiver decoder must not be so sensitive that it would respond to extraneous signals, including external radio frequency sources in the area of the launch point. The design of a command receiver decoder must provide for its sensitivity to be repeatable within ±3dB throughout its lifetime when tested under similar conditions.

(3) A command receiver decoder must function, including processing of arm and destruct signals, when exposed to the maximum radio frequency energy that the command control system transmitter is capable of producing plus a 3 dB margin without change or degradation in performance after such exposure.

(4) A command receiver decoder must function, including processing of arm and destruct signals, at its threshold sensitivity when subjected to twice the worst-case radio frequency shift of the carrier center frequency and command tone modulation that could occur due to factors such as command control system transmitting equipment performance variations, flight doppler shifts, or local oscillator instability.

(5) The design of a command receiver decoder must protect against performance degradation when exposed to an external transmitter of less power than the command control system transmitter. The application of any unmodulated radio frequency at a power level up to 80% of the command control system transmitter's modulated carrier signal must not capture the receiver or interfere with a signal from the command control system.

(6) A command receiver decoder must output a signal strength monitor that is directly related and proportional to the radio frequency input signal. The linear region from threshold to saturation must have a dynamic range of at least 50 dB.

(7) A command receiver decoder must not produce an inadvertent output when subjected to a radio frequency input short-circuit, open-circuit, or any change in input voltage standing wave ratio.

(d) *Decoder logic.* Decoder logic circuitry must provide for a command receiver decoder to function in accordance with the following:

(1) A command receiver's decoder must reliably process a command signal sequence of tones at twice the worst-case tolerances associated with the command control system transmitting equipment.

(2) A command receiver decoder's tone filter must have a bandwidth that ensures accurate recognition of the command signal tone. The receiver decoder must distinguish between tones that are capable of inhibiting or inadvertently issuing an output command.

(3) The arm command must be a prerequisite for the destruct command. Once the arm command is processed, a command receiver decoder must be single fault tolerant against an inadvertent destruct.

(4) The design of a command receiver decoder must provide for the decoding and output of a tone, such as a pilot tone or check tone, that is representative of link and command closure. The presence or absence of this tone signal must have no effect on a command receiver decoder's command processing and output capability.

(5) Tone sequences used for arm and destruct must protect against inadvertent or unintentional destruct actions.

D417.17 Wiring and Connectors

(a) A launch operator shall ensure that the design of each cable, connector, and wire that interfaces with any flight termination system component is qualified as part of the component qualification testing performed according to appendix E of this part.

(b) All wiring and connectors that interface with flight termination system components must have electrical continuity and electrical dropout protection that ensures the flight termination system components function without degradation in performance.

(c) All wiring and connectors must have shielding that ensures the flight termination system's performance will not be degraded or experience an inadvertent destruct output when subjected to electromagnetic interference levels 20 dB greater than the greatest electromagnetic interference induced by launch vehicle and launch site systems.

(d) The dielectric withstanding voltage between mutually insulated portions of any component part must provide for the component to function at the component's rated voltage and withstand momentary over-potentials due to switching, surge, or any other similar event without degradation in performance.

(e) The insulation resistance between mutually insulated portions of any component must provide for the component to function at its rated voltage and the insulation material must not deteriorate due to workmanship, heat, dirt, oxidation or loss of volatile material.

(f) The insulation resistance between wire shields and conductors, and between each connector pin must be capable of withstanding a minimum workmanship voltage of at least 1500 volts, direct current, or 150 percent of the rated output voltage, whichever is greater.

(g) For loads that will be experienced with continuous duty cycles of greater than 100 seconds, all wiring and connector pins must be sized to carry 150% of the design load. For loads that will be experienced for less than 100 seconds, all wiring and insulation must provide a design margin greater than the wire insulation temperature specification.

(h) All cables and connectors must not degrade in performance when subjected to the greatest pull force that could be experienced during manufacturing or installation or due to any unexpected handling environment that could go undetected.

(i) Redundant flight termination system circuits must not share any wiring harness or connector.

(j) For any connector or pin connection that is not functionally tested once connected as part of a flight termination system or component, the design of the connector or pin connection must eliminate the possibility of a bent pin, mismating, or misalignment.

(k) A bent connector pin that makes unintended contact with another pin or the case of the connector or component or results in an open circuit must not result in inadvertent initiation. A flight termination system component must be designed to prevent undetectable damage or overstress from occurring as the result of a bent pin.

(l) In addition to requirements of this section, all connectors must satisfy the piece part requirements of appendix F of this part.

(m) All connectors must positively lock to prevent inadvertent disconnection during launch vehicle processing and flight.

D417.19 Batteries

(a) *Capacity.* A flight termination system battery must have a capacity that is indicated on its name plate and is no less than the sum total amp-hour and pulse capacity needed for load and activation checks, launch countdown checks, any potential hold time, any potential number of preflight re-tests due to potential schedule delays including the launch operator's desired number of potential launch attempts before the battery would have to be replaced, plus a flight capacity allowance. The flight capacity allowance must be no less than 150% of the capacity needed to support a normal flight from liftoff to the no longer endanger time determined in accordance with § 417.221(c) and must allow for two arm and two destruct command loads at the end of the flight. In addition, for a launch vehicle that uses solid propellant, the flight capacity allowance must be greater than or equal to the capacity need to support a 30-minute hang-fire hold time.

(b) *Electrical characteristics.* A flight termination system battery must have the following electrical characteristics:

(1) The lowest allowed battery voltage, including all load conditions, must be the flight termination system electrical components' minimum acceptance-test voltage in accordance with the test requirements of appendix E of this part. For a pulse application used to fire an electro-explosive device, the voltage supplied by a battery under all potential load conditions must be greater than or equal to the lowest qualification test voltage applicable to the associated electrical components according to appendix E of this part.

(2) A battery that provides power to an electro-explosive device initiator must:

(i) Deliver 150% of the electro-explosive device's all-fire current at the qualification test level. The battery must deliver the current to the ordnance initiator at the lowest allowed system battery voltage.

(ii) Have a current pulse duration ten times greater than the duration required to initiate the electro-explosive device or a minimum workmanship screening level of 10 seconds, whichever is greater.

(iii) Have a pulse capacity of no less than twice the expected number of arm and destruct command sets planned during launch vehicle processing, preflight flight termination system end-to-end tests, plus flight commands including load checks, conditioning, and firing of initiators.

(3) The design of a battery and its activation procedures must ensure uniform cell voltage after activation including any battery conditioning needed to ensure uniform cell voltage, such as peroxide removal or nickel cadmium preparation. A launch operator shall ensure that the same activation procedures are used to activate batteries for qualification testing and to activate flight batteries.

(4) The design of a battery must permit open circuit voltage and load testing of each cell when assembled in the battery case during and after activation.

(5) The design of a battery and cell must protect against undetectable damage resulting from reverse polarity, shorting, overcharging, thermal runaway, and overpressure.

(c) *Service and storage life.* The service and storage life of a flight termination system battery must be in accordance with the following:

(1) A flight termination system battery must have a total activated service life that provides for the battery to meet the capacity and electrical characteristics required by paragraphs (a) and (b) of this section.

(2) A flight termination system battery must have a specified storage life. The design of a battery must provide for meeting the activated service life requirement in paragraph (c)(1) of this section after being subjected to its storage life, whether stored in an activated or inactivated state.

(d) *Monitoring capability.* The design of a battery must provide for monitoring the status of battery voltage and current being drawn. Monitoring accuracy must be consistent with the minimum and maximum voltage and current limits to be used for launch countdown. The design of a battery that requires heating or cooling to sustain performance must provide for monitoring the battery's temperature.

(e) *Manufacturing controls.* Each flight termination system battery production lot must be subjected to destructive and nondestructive acceptance testing in accordance with appendix E of this part unless a launch operator demonstrates during the licensing process that all cell and battery parts, materials and manufacturing processes are documented and under configuration control. A launch operator may submit any associated battery documentation and configuration control procedures and processes to the FAA during the licensing process for approval on a case-by-case basis.

(f) *Battery identification.* Each battery must be permanently labeled with the component name, type of construction (including chemistry), manufacturer identification, part number, lot and serial number, date of manufacture, and storage life.

(g) *Battery heaters.* The design of a battery heater must ensure uniform temperature regulation of all battery cells.

(h) *Silver zinc batteries.* A silver zinc battery that is part of a flight termination system must meet the requirements of paragraphs (a) through (g) of this section and the following:

(1) A silver zinc battery must consist of cells with electrode plates, all of which are from the same production lot.

(2) The design of a silver zinc battery must allow activation of individual cells within the battery.

(3) For any silver zinc battery that may leak electrolyte as part of normal operations, the battery's performance must not be degraded when the battery experiences the greatest normal electrolyte migration. Degradation in performance includes changes in pin-to-case or pin-to-pin resistances that are outside the design limits.

(4) The design of a silver zinc battery and its cells must allow for the qualification, acceptance, and storage life extension testing required by appendix E of this part. A launch operator shall ensure sufficient batteries and cells are available to accomplish the required testing.

(5) For each battery, one additional cell with the same lot date code shall be attached to the battery for use in cell acceptance verification tests. The cell shall be attached to the battery from the time of assembly until performance of the acceptance tests to ensure that the additional cell is subjected to all the same environments as the complete battery.

(i) *Rechargeable batteries, such as nickel cadmium batteries.* A rechargeable battery, such as a nickel cadmium battery, that is part of a flight termination system must meet the requirements in paragraphs (a) through (g) of this section and the following:

(1) Each charge and discharge cycle of a rechargeable flight termination system battery must provide the capacity and electrical characteristics required by paragraphs (a) and (b) of this section.

(2) A rechargeable battery must meet its performance specifications for five times the number of operating charge and discharge cycles expected of the battery throughout its life, including all acceptance testing, preflight testing, and flight.

(3) Each rechargeable battery and each of the battery's cells must consistently retain its charge and provide the capacity margin according to its performance specifications and satisfy the capacity requirements contained in paragraph (a) of this section.

(4) A rechargeable battery must consist of cells from the same production lot.

(5) The design of a nickel cadmium battery and each of its cells must allow for the qualification and acceptance tests required according to appendix E of this part. A launch operator shall ensure sufficient batteries and cells are available to accomplish the required testing. During the licensing process, the FAA may identify and impose additional design and test requirements for any other type of rechargeable battery proposed for use as part of a flight safety system.

D417.21 Electro Mechanical Safe and Arm Devices With an Internal Electro-Explosive Device

(a) A safe and arm device in the arm position must remain in the arm position without degradation in performance when subjected to the design environmental levels determined according to D417.3 of this appendix.

(b) All wiring and connectors used on a safe and arm device must satisfy D417.17 of this appendix.

(c) All piece parts in the firing circuit of a safe and arm device must satisfy appendix F of this part.

(d) A safe and arm device's internal electro-explosive device must satisfy the requirements for an ordnance initiator contained in D417.27 of this appendix.

(e) A safe and arm device must not require any adjustment throughout its service life.

(f) Once armed and locked, a safe and arm device, including all internal ordnance components, must function with a reliability of 0.999 at a 95% confidence level.

(g) A safe and arm device's internal electrical firing circuitry, such as wiring, connectors, and switch deck contacts, must be capable of withstanding, without degradation in performance, an electrical current pulse with an energy level of no less than 150% of the internal electro-explosive device's all-fire energy level for 10 times the all-fire pulse duration. A safe and arm device must be capable of delivering this firing pulse to the internal electro-explosive device without any dropouts when subjected to the design environmental levels.

(h) The design of a safe and arm device must provide for the device to function without degradation in performance after being exposed to any inadvertent transportation, handling, or installation environment that could go undetected.

(i) The design of a safe and arm device must provide for the device to not initiate and be safe to handle after being subjected to the worst-case drop and resulting impact that it could experience during storage, transportation, or installation.

(j) When a safe and arm device's electro-explosive device is initiated, the safe and arm device's body must not fragment, regardless of whether the explosive transfer system is connected or not.

(k) When dual electro-explosive devices are used within a single safe and arm device, the design must ensure that one electro-explosive device does not affect the performance of the other electro-explosive device.

(l) A safe and arm device must not degrade in performance when subjected to five times the total expected number of safe and arm cycles required for acceptance tests, preflight tests, and flight operations, including an allowance for potential re-tests due to schedule changes.

(m) A launch operator shall ensure that a safe and arm device is tested according to appendix E of this part. The design of a safe and arm device must allow for separate component testing and the recording of parameters that verify its functional performance during testing, including the status of any command output.

(n) A safe and arm device must be environmentally sealed to the equivalent of 10^{-4} scc/sec of helium or the device's design must provide other means of withstanding non-operating environments, such as salt-fog and humidity experienced during storage, transportation and preflight testing.

(o) While in the safe position, a safe and arm device must prevent degradation in performance or inadvertent initiation of an electro-explosive device during transportation, storage, preflight testing, and preflight failure conditions and must be in accordance with the following:

(1) While in the safe position, a safe and arm device's electrical input firing circuit must prevent degradation in performance or inadvertent initiation of the electro-explosive device when subjected to any continuous external energy source such as static discharge, radio frequency energy, or firing voltage.

(2) While in the safe position, a safe and arm device must prevent the initiation of its internal electro-explosive device and any other ordnance train component, with a reliability of 0.999 at a 95% confidence level.

(3) The performance of a safe and arm device must not degrade when locked in the safe position and subjected to a continuous operational arming voltage with an exposure time of five minutes or the maximum time that could occur operationally, whichever is greater.

(4) A safe and arm device must not initiate its electro-explosive device or any other ordnance train component when locked in the safe position and subjected to a continuous operational arming voltage with an exposure time of be one hour or the maximum time that could occur operationally, whichever is greater.

(5) The design of a safe and arm device must provide for manual and remote status indication when in the safe position. When transitioning from the arm to safe position, the safe indication must not appear unless the position of the safe and arm device has progressed more than 50% beyond the no-fire transition motion.

(6) The design of a safe and arm device must provide for its rotor or barrier to be remotely moved to the safe position from any rotor or barrier position.

(7) The design of a safe and arm device must provide for the device to be manually moved to the safe position.

(8) A safe and arm device must include a safing interlock that prevents movement from the safe position to the arm position while operational arming current is being applied. The design of the interlock must provide for it to be positively locked into place and allow for verification of proper functioning. The interlock removal design or procedure must eliminate the possibility of accidental disconnection of the interlock.

(p) The arming of a safe and arm device must be in accordance with the following:

(1) A safe and arm device is armed when all ordnance interfaces, such as electro-explosive device, rotor charge, and explosive transfer system components are aligned with one another to ensure propagation of the explosive charge.

(2) When in the arm position, the greatest energy supplied to a safe and arm device's electro-explosive device from electronic circuit leakage and radio frequency energy must be no greater than 20 dB below the guaranteed no-fire level of the electro-explosive device.

(3) The design of a safe and arm device must provide a local and remote status indication when the device is in the arm position. The arm indication must not appear unless the safe and arm device has been moved to the locked arm position.

(4) The design of a safe and arm device must provide for the device to be remotely armed.

D417.23 Exploding Bridgewire Firing Unit

(a) *General.* The design of an exploding bridgewire firing unit must be in accordance with the requirements for electronic components contained in D417.13 of this appendix.

(b) *Charging and discharging.* The design of an exploding bridgewire firing unit must provide for the unit to be remotely charged and discharged and allow for an external means to positively interrupt the firing capacitor charging voltage.

(c) *Input command processing.* An exploding bridgewire firing unit's electrical input processing circuitry must be in accordance with the following:

(1) An exploding bridgewire firing unit's input circuitry must function when subjected to the greatest potential electromagnetic interference noise environments without inadvertent triggering.

(2) All series redundant branches in the firing circuit of an exploding bridgewire firing unit that prevent any single failure point from issuing a destruct output must include monitoring circuits or test points for verifying the integrity of each redundant branch after assembly.

(3) The unit input trigger circuitry of an exploding bridgewire firing unit must maintain a minimum 20 dB margin between the threshold trigger level and the worst-case noise environment.

(4) The design of an exploding bridgewire firing unit must provide for a minimum trigger sensitivity of 6 dB higher in amplitude and one-half the time duration of the worst-case trigger signal that could be delivered during flight.

(5) In the event of a power dropout, any control or switching circuit critical to the reliable operation of an exploding bridgewire firing unit, including solid-state power transfer switches must not change state for 50 milliseconds or more.

(6) An exploding bridgewire firing unit's response time must satisfy D417.13(b). An exploding bridgewire firing unit's response time must satisfy its performance specification for the range of input trigger signals from the specified minimum trigger signal amplitude and duration to the specified maximum trigger signal amplitude and duration.

(d) *High voltage output.* An exploding bridgewire firing unit's high voltage discharge circuit must be in accordance with the following:

(1) An exploding bridgewire firing unit must include circuits for capacitor charging, bleeding, charge interruption, and triggering.

(2) The design of an exploding bridgewire firing unit must provide for a single fault tolerant capacitor discharge capability.

(3) The design of an exploding bridgewire firing unit must provide for the unit to deliver a voltage to the exploding bridgewire that is no less than 50% greater than the exploding bridgewire's minimum all-fire voltage, not including transmission losses, at the unit's specified worst-case high and low arming voltages.

(4) The design of an exploding bridgewire firing unit must prevent corona and arcing on internal and external high voltage circuitry.

(5) An exploding bridgewire firing unit must meet its performance specifications at the worst case high and low arm voltages that could be delivered during flight.

(6) Any high energy trigger circuit used to initiate exploding bridgewire firing unit's main firing capacitor must deliver an output signal of no less than a 50% voltage margin above the nominal voltage threshold level.

(e) *Output monitors.* The monitoring circuits of an exploding bridgewire firing unit must provide the data for real-time checkout and determination of the firing unit's acceptability for flight. The monitored data must include the voltage level of all high voltage capacitors and the arming power to the firing unit.

D417.25 Ordnance Interrupter Safe and Arm Device Without an Electro-Explosive Device

(a) Once locked in the arm position, an ordnance interrupter must function to accept a donor explosive transfer system charge and transfer the output detonation to an explosive transfer system acceptor charge's ordnance initiation train with a reliability of 0.999 at a 95% confidence level.

(b) An ordnance interrupter must remain in the arming position and function without degradation in performance when subjected to the design environmental levels determined according to D417.3 of this appendix.

(c) An ordnance interrupter must not require adjustment throughout its service life.

(d) The design of an ordnance interrupter must provide for the ordnance interrupter to function without degradation in performance after being subjected to any inadvertent transportation, handling, or installation environment that could go undetected.

(e) The design of an ordnance interrupter that uses ordnance rotor leads must provide for the device to not initiate and be safe to handle after being subjected to the worst-case drop and resulting impact that it could experience during storage, transportation, and installation.

(f) The design of an ordnance interrupter must provide for the ordnance interrupter to withstand, without degradation, repetitive functioning for five times the expected number of arming cycles required for acceptance testing, pre-flight checkout, and flight operations, including an allowance for re-tests due to potential schedule delays.

(g) An ordnance interrupter must not fragment during ordnance initiation.

(h) While in the safe position, an ordnance interrupter must be protected from conditions that could degrade its performance or cause inadvertent initiation during transportation, storage, installation, preflight testing, and potential preflight failure conditions. Safing of an ordnance interrupter must be in accordance with the following:

(1) While in the safe position, an ordnance interrupter shall prevent the functioning of an ordnance train with a reliability of 0.999 at a 95% confidence level.

(2) When locked in the safe position, an ordnance interrupter must prevent initiation of an ordnance train and the ordnance interrupter's performance must not degrade when locked in the safe position and subjected to a continuous operational arming voltage.

(3) The design of an ordnance interrupter must provide for the ordnance interrupter to be manually and remotely safed from any rotor or barrier position and must provide for a manual and remote status indication of when the ordnance interrupter is in the safe position.

(4) An ordnance interrupter must include a safing interlock that prevents moving from the safe position to the arm position while an operational arming current is being applied. The design of a safing interlock must provide for the interlock to be positively locked into place and must provide for a means of verifying proper function of the interlock. The design of a safing interlock and any related operation procedure must eliminate the possibility of inadvertent disconnection of the interlock.

(i) Arming of an ordnance interrupter must be in accordance with the following:

(1) An ordnance interrupter is armed when all ordnance interfaces, such as a donor explosive transfer system, rotor charge, and acceptor explosive transfer system are aligned with one another to propagate the explosive charge.

(2) An ordnance interrupter must provide a local and remote status indication of when the ordnance interrupter is in the arm position.

(3) The design of an ordnance interrupter must provide for the ordnance interrupter to be remotely armed.

D417.27 Ordnance Initiators

(a) The requirements of this section apply to low voltage electro-explosive devices and high voltage exploding bridgewire ordnance initiators.

(b) An ordnance initiator must have a specified all-fire energy level. When the all-fire energy level is applied, the ordnance initiator must initiate with a reliability of no less than 0.999 at a 95 percent confidence level.

(c) An ordnance initiator must have a specified no-fire energy level. When exposed to continuous application of the no-fire energy level, the ordnance must not initiate with a reliability of no less than 0.999 at a 95 percent confidence level. An ordnance initiator's reliability to initiate must not degrade when subjected to continuous application of the no-fire energy level.

(d) The lowest temperature at which an ordnance initiator would experience autoignition, sublimation, or melting or in any other way experience degradation in performance must be no less than 30 °C higher than the highest temperature that could be experienced during handling, testing, storage, transportation, installation, or flight.

(e) An ordnance initiator must be capable of withstanding, without firing or degradation in performance, the maximum expected electrostatic discharge that it could experience from personnel or conductive surfaces. An ordnance initiator must be capable of withstanding workmanship discharges of no less than a 25-kV, 500-pF pin-to-pin discharge through a 5-kΩ resistor and a 25-kV, 500-pF pin-to-case discharge with no resistor.

(f) An ordnance initiator must not initiate or degrade in performance when exposed to stray electrical energy that is at a 20dB margin greater than the greatest stray electrical energy that the ordnance initiator could experience during handling, test, storage, transportation, installation, or flight. When determining the 20dB margin, a launch operator shall account for all potential sources of stray electrical energy including leakage current from other electronic components and radio frequency induced electrical energy. Note: The intent of this requirement is generally met through the use of ordnance initiators that are capable of withstanding no less than one amp and one watt for five minutes without initiating or degrading in performance.

(g) The design of an ordnance initiator must provide for the device to function without degradation in performance after being exposed to any inadvertent transportation, handling, or installation environment that could go undetected.

(h) The design of an ordnance initiator must provide for the device to not initiate and be safe to handle after being subjected to the worst-case drop and resulting impact that the device could experience during storage, transportation, or installation.

(i) An ordnance initiator must be hermetically sealed to the equivalent of 5×10^{-6} scc/sec of helium.

(j) The insulation resistance between mutually insulated points must ensure that an ordnance initiator's performance will not degrade at the maximum applied voltage during testing and flight. The insulation material must not deteriorate, whether due to workmanship, heat, dirt, oxidation, or other causes. An ordnance initiator must be capable of withstanding a workmanship voltage of no less than 500 volts.

D417.29 Exploding Bridgewire

(a) An exploding bridgewire must satisfy the ordnance initiator requirements contained in D417.27 of this appendix and the requirements of this section.

(b) An exploding bridgewire's electrical circuitry, such as connectors, pins, wiring and header assembly, must transmit an all-fire pulse at a level 50% greater than the lowest exploding bridgewire firing unit's operational firing voltage. This includes allowances for effects such as corona and arcing of a flight configured exploding bridgewire exposed to altitude, thermal vacuum, salt-fog, and humidity environments.

(c) An exploding bridgewire must not fragment during ordnance initiation.

(d) The design of all exploding bridgewire connector pins must provide for the pins to withstand the largest axial tension and compression loads that could be induced during connector mating.

D417.31 Percussion Actuated Device

(a) A percussion actuated device's lanyard pull system must include protective covers to prevent inadvertent pulling of the lanyard.

(b) A percussion actuated device must not fragment upon initiation.

(c) A percussion actuated device must have a specified guaranteed no-fire pull force of no less than twice the largest inadvertent pull force that the device could experience during installation, preflight checkout, or flight.

(d) The reliability of a percussion actuated device to not initiate when exposed to its maximum no-fire pull force and then released must be no less than 0.999 at a 95% confidence level.

(e) A percussion actuated device must have a primer all-fire energy level, including spring constant and pull distance that ensures initiation with a reliability of 0.999 at a 95% confidence level. The design of a percussion actuated device must ensure that the all-fire energy level reliability does not degrade when subjected to preflight and flight environments.

(f) A percussion actuated device must deliver an operational impact force to the primer of no less than twice the all-fire energy level.

(g) A percussion actuated device's primer must initiate and not degrade in performance when subjected to two times the operational impact energy or four times the all-fire impact energy level.

(h) A percussion actuated device's reliability must not degrade when subjected to a no-fire pull force and then released.

(i) The lowest temperature at which a percussion actuated device would experience autoignition, sublimation, or melting or in any other way experience degradation in performance must be no less than 30 °C higher than the highest temperature that could be experienced during handling, testing, storage, transportation, installation, or flight.

(j) The design of a percussion actuated device must provide for the device to function without degradation in performance after being exposed to any inadvertent transportation, handling, or installation environment that could go undetected.

(k) A percussion actuated device's ordnance must be hermetically sealed to the equivalent of 5×10^{-6} scc/sec of helium.

(l) The design of a percussion actuated device must provide for the device's structural and firing components to withstand 500 percent of the largest pull or jerk force that it could experience during breakup of the launch vehicle.

(m) The design of a percussion actuated device must provide for the device to not initiate and be safe to handle after being subjected to the worst-case drop and resulting impact that it could experience during storage, transportation, and installation.

(n) A percussion actuated device must include a safing interlock that prevents the percussion actuated device assembly from pulling more than 50% of the guaranteed no-fire pull distance. The design of the safing interlock must provide for the interlock to be positively locked into place and must provide for a means of verifying proper function of the interlock. The design of the safing interlock must eliminate the possibility of inadvertent disconnection or removal of the interlock should a pre-load condition exist on the lanyard. The safing interlock must prevent initiation of the percussion actuated device when subjected to the greatest possible inadvertent pull force that could be experienced during preflight processing.

D417.33 Explosive Transfer System

(a) Ordnance used in an explosive transfer system must utilize secondary explosives except under the provisions of D417.1(a).

(b) The design of all explosive transfer system donor, acceptor, and transition elements must provide for transfer of the explosive charge with a reliability of 0.999 at a 95% confidence level.

(c) An explosive transfer system must function with the smallest bend radius that it would subjected to when implemented in its flight configuration. The reliability of an explosive transfer system must not degrade when subjected to preflight and flight environments with this smallest bend radius.

(d) All explosive transfer connectors must include a positive locking capability and provide for verification of proper connection through visual inspection.

(e) Each explosive transfer system component must not degrade in performance when subjected to the largest pull force that could be experienced during storage, handling, transportation, installation, or flight.

(f) The design of an explosive transfer system must provide for the system to function without degradation in performance after being exposed to any inadvertent transportation, handling, or installation environment that could go undetected.

(g) The design of an explosive transfer system must provide for the system to not initiate and be safe to handle after being subjected to the worst-case drop and resulting impact that it could experience during storage, transportation, and installation.

D417.35 Destruct Charge

(a) A destruct charge must utilize secondary explosives except under the provisions of D417.1(a).

(b) When initiated, a destruct charge acceptor, where applicable, or main charge must ensure the transfer of the explosive charge with a reliability of 0.999 at a 95% confidence level.

(c) Initiation of a destruct charge must result in a flight termination system action in accordance with the flight termination system functional requirements in § 417.303 of this part.

(d) The design of a destruct charge must provide for the charge to sever or penetrate 150% of the thickness of the material that must be severed or penetrated in order for the destruct charge to accomplish its intended flight termination function. A destruct charge, when initiated to terminate the flight of a launch vehicle, must not detonate any launch vehicle or payload propellant.

(e) All destruct charge fittings must withstand 200% of the installation, qualification, and breakup loads without degradation.

(f) The design of a destruct charge must provide for the charge to function without degradation in performance after being exposed to any inadvertent transportation, handling, or installation environment that could go undetected.

(g) The design of a destruct charge must provide for the charge to not initiate and be safe to handle after being subjected to the worst-case drop and resulting impact that it could experience during storage, transportation, or installation.

D417.37 Vibration and Shock Isolators

(a) The design of a vibration or shock isolator must provide for the isolator to have repeatable natural frequency and resonant amplification parameters when subjected to flight environments. The design must account for all effects that could cause variations in repeatability, including acceleration preloads, temperature, component mass, and vibration level variations.

(b) The design of a vibration or shock isolator must provide for the isolator to withstand the qualification test and breakup loads without degradation in performance.

(c) All components mounted on a vibration or shock isolator must withstand the environments introduced by isolator amplification. In addition, all component interface hardware, such as connectors, cables, and grounding straps, must withstand any added deflection introduced by an isolator.

D417.39 Miscellaneous Components

The design of any flight termination system component not specifically identified in this appendix must provide for the component to accomplish its intended function when subjected to non-operating and operating environments that are determined in accordance with D417.3 of this appendix. The design of a miscellaneous component must provide for the component to be tested in accordance with appendix E of this part. The FAA may identify additional requirements for new or unique components in coordination between the launch operator and the FAA through the licensing process.

Appendix E to Part 417—Flight Termination System Component Testing and Analysis

E417.1 General

(a) This appendix contains requirements for qualification, acceptance, and age surveillance testing of flight termination system components. A launch operator shall employ on its launch vehicle only those flight termination system components that satisfy the requirements of this appendix. A launch operator's test program must satisfy § 417.315 and the specific test requirements of this appendix as they apply to the launch operator's flight termination system.

(b) A launch operator shall demonstrate, by test or analysis, that each flight termination system component withstands the environments identified in the applicable test matrices provided in this appendix without degradation in performance.

(c) Compliance with this appendix shall be documented at the time of license application in accordance with § 415.129 of this chapter and for each launch in accordance with § 417.315.

(d) This appendix contains test requirements that are common to all flight termination system components and requirements that apply to specific components. A launch operator shall meet the test requirements that apply to each component unless the launch operator demonstrates, clearly and convincingly through the licensing process, that an alternative provides an equivalent level of safety. The FAA may identify additional test requirements, not contained in this appendix, through the licensing process for new technology or any unique application of existing technology. A launch operator's flight termination system testing for a launch shall accord with the testing compliance matrix approved by the FAA during the licensing process in accordance with § 415.129 of this chapter.

(e) A component sample whose test data reflects that it is out-of-family when compared to other samples of the component shall be considered a test failure even if the component satisfies other test criteria. An unexpected change in the performance of a component sample occurring from the start to the end of testing shall be considered a test failure. For such failures, a launch operator shall perform a failure analysis to determine the root cause of the failure and ensure that there are no generic design, workmanship, or process problems with other flight components of similar configuration.

(f) A component sample that exhibits any sign that a part is stressed beyond its design limit, such as a cracked circuit board, bent clamps, worn part, or loose connector or screw, shall be considered a test failure even if the component passes the final functional test.

(g) If a test discrepancy occurs, the test shall be interrupted, and the discrepancy verified. If the discrepancy is regarded as a failure of the test item, a failure analysis shall be performed and documented along with all corrective actions. The failure analysis shall identify the cause of the failure, the mechanism of the failure, and isolation of the failure to the smallest replaceable item(s).

(h) A launch operator shall apply test tolerances to the nominal test values specified in this appendix and in accordance with the following:

(1) Measurements taken during functional tests must have tolerances that provide the accuracy needed to detect out-of-family and out-of-specification anomalies.

(2) The required qualification design margins for flight termination system components include allowances for test fixture tolerances. These tolerances are identified in this appendix where applicable for each component. Where there are differences between the test tolerances specified in this appendix and the actual test tolerance values, the test levels shall be adjusted accordingly to maintain the required design margin.

(i) All qualification testing shall be performed with the component in its flight configuration, and with flight hardware such as flight connectors, cables, cable clamping scheme, attaching hardware such as vibration and shock isolators, brackets and bolts in flight configuration. Cables and explosive transfer systems shall be secured in the flight configuration at the first tie-down point.

(j) A launch operator shall ensure that flight hardware being acceptance tested is not subjected to forces or environments that are not tested during qualification testing. When special test fixtures are used, such as, to test multiple components during acceptance testing, a launch operator shall ensure that each component is subjected to the required environmental test levels. A test fixture shall be certified for use by measuring and verifying the environmental input at each component position on the fixture.

(k) Components that fail to meet their performance specifications during testing may be reworked and repaired. For any repair requiring disassembly of the component or soldering operations, full acceptance testing shall be performed again. The number of acceptance tests performed on a component must not exceed the duration used during qualification testing. A component that fails to pass any acceptance test shall not be used for flight.

E417.3 Component Test Matrices

(a) *General.* The test matrices provided in E417.17 through E417.39 identify test requirements for specific flight termination system components. Each component must withstand the required test environment without degradation in performance. A launch operator shall apply one of the following to each test requirement identified in the test matrices:

(1) Perform the required test identified in the test matrix and as described in the paragraph referenced by the test matrix.

(2) Demonstrate the test environment is not applicable to the launch operator's flight termination system component.

(3) Perform an analysis that clearly and convincingly demonstrates that the component is unaffected by the subject test.

(4) Perform an analysis that clearly and convincingly demonstrates that another test or combination of tests performed on the component imparts equal or greater stress on the component than the test in question. For any qualification test, a launch operator may implement qualification by similarity to tests performed on identical or similar hardware in accordance with E417.323.

(b) *Test plans, procedures, and reports.* A launch operator shall develop written test procedures and reports in accordance with §§ 415.129 of this chapter and 417.315. Any analysis performed in lieu of testing shall be documented in the test reports.

(c) *Testing sequence.* The testing sequence must detect any component anomaly incurred during testing. Testing shall be performed in the order specified in the test matrices contained in this appendix.

(d) *Quantity of sample components tested.* The number of sample components to be tested that is indicated in each test matrix applies to a new component design. A launch operator may test fewer than the required number of sample components if the launch operator demonstrates, clearly and convincingly through the licensing process, that the component has experienced comparable environmental tests or the component is similar to a design that has experienced comparable environmental tests. A component used for comparison must have been subjected to all required environmental tests to develop cumulative effects.

(e) *Performance verification tests.* Performance verification tests shall be performed to validate that a component satisfies its performance specifications and functions without degradation in performance. Performance verification tests shall be performed before and after a component is exposed to a test environment and must include status-of-health tests where measurements of performance parameters are used to identify potential component performance degradation. Status-of-health performance indicators need not be linked to a component's performance specifications. Where applicable, all performance verification tests of a component shall be performed at the low, nominal, and high operating voltages that will be experienced during preflight and flight operations.

(f) *Abbreviated performance verification tests.* Abbreviated performance verification tests shall be performed to validate a sampling of critical component performance parameters while a component is being subjected to the test environment. These tests shall ensure that all minimum functions critical to flight termination system performance are exercised along with status-of-health indications to identify potential component degradation. Where applicable, the abbreviated performance verification tests of a component shall be performed at the component's nominal operating voltage.

(g) *Status-of-health tests.* Components and subsystems shall be subjected to status-of-health tests to verify that all critical parameters are within their performance specification. A critical parameter is one that acts as an indicator of an internal anomaly that may not be detectable by means of functional performance tests. A launch operator shall identify all critical parameters for each component, which must include the critical parameters identified in this appendix for specific components. Status-of-health test data shall be recorded and used for comparison to determine performance degradation after environmental test exposure.

E417.5 Component Examination

(a) *General.* Each component shall be examined to identify manufacturing defects that may not be detectable during performance testing. The presence of a defect constitutes a failure. The examinations applicable to each component are identified in the test matrices provided in this appendix. The examinations shall be performed in accordance with the requirements of this section.

(b) *Visual.* Visual examination shall be performed to ensure that good workmanship was employed during manufacture of a component and that the component is free of obvious physical defects. Visual examination may include the use of optical magnification, mirrors, or specific lighting, such as ultra violet illumination.

(c) *Dimension.* The physical dimension of a component shall be checked to ensure that it is within the component's dimensional design limits.

(d) *Weight.* A component shall be weighed to verify that its weight is within its performance specification.

(e) *Identification.* Component identification tags shall be checked to ensure that they contain information that allows for configuration control and tracing of each component.

(f) *X-ray and N-ray examination.* For a component that is required to undergo X-ray or N-ray examination in accordance with the test matrixes in this appendix, the quality and resolution of the film must allow detailed inspection of the internal parts of the component and determination of potentially anomalous conditions. Multiple photographs shall be taken from different angles to allow complete coverage of the required areas. A certified technician shall perform evaluation of X-ray and N-ray photographs. Technician certification and training must satisfy § 417.105 and be documented in accordance with § 415.113.

(g) *Disassembly.* A component shall be inspected for excessive wear and damage after exposure to qualification test environments. The level of inspection may vary depending on the type of component and in accordance with following:

(1) A component that can be disassembled shall be completely taken apart to the point at which all internal parts can be inspected.

(2) All internal components and subassemblies, such as circuit board traces, internal connectors, welds, screws, clamps, electronic piece parts, battery cell plates and separators and mechanical subassemblies shall be examined using an applicable inspection method, such as, magnifying lens or radiographic techniques.

(3) For a component that cannot be disassembled, such as an antenna, potted

unit, or welded structure, the FAA shall identify special inspection requirements in coordination with the launch operator through the licensing process in accordance with § 415.11 of this chapter to ensure that there are no internal defects. Special inspection requirements may include depotting units, cutting components into cross-sections, or radiographic inspection.

(h) *Leakage.* A component that is required to undergo leak tests according to the test matrixes in this appendix shall be subjected to leak checks to ensure that the component's seal is within its design limit before and after being subjected to the test environment. A leak test must have the accuracy and resolution to verify the component's leak rate is no greater than its design limit in accordance with the following:

(1) An electronic component shall be tested to verify a leak rate of no greater than the equivalent of 10^{-4} standard cubic centimeters/second (scc/sec) of helium. Leak testing is not required for unsealed components that have successfully completed salt-fog, humidity, and fine sand qualification testing.

(2) An ordnance component shall be tested to verify a leak rate of no greater than the equivalent of 10^{-6} scc/sec of helium.

E417.7 Qualification Testing and Analysis

(a) A launch operator shall ensure that the design of each flight termination system component provides for the component to function according to its performance specifications when subjected to normal flight environments and environments that would result in breakup of the launch vehicle. A launch operator shall demonstrate, by analysis or test, that a component will satisfy all its performance specifications when subjected to test conditions at the design environmental levels required by D417.3 of appendix D of this part and in accordance with the qualification non-operating and operating environmental test requirements of this appendix.

(b) Prior to being subjected to qualification test environments, a component shall be subjected to environmental acceptance test conditions without physical damage or degradation in performance. Acceptance test requirements are provided in E417.11 and the acceptance test matrices of this appendix.

(c) Each component must be tested in its flight configuration, with all flight hardware such as connectors, cables, and any cable clamps, and with all attachment hardware, such as dynamic isolators, brackets and bolts, as part of that flight configuration. When using any test fixture, such as that used to test multiple component samples, any effects that the fixture has on the testing shall be determined and the test levels that each component sample receives shall be verified.

(d) A component design shall undergo qualification testing again if there is a change in the design of the component or in the environmental levels to which it will be exposed. A component must be re-qualified if the manufacturer's location, parts, materials, or processes have changed since the previous qualification. A change in the name of the manufacturer as a result of a sale does not require re-qualification if the personnel, factory location or the parts, material and processes remain unchanged since the last component qualification. The extent of re-qualification testing must be the same as the initial qualification unless the launch operator demonstrates, clearly and convincingly through the licensing process, that other testing achieves an equivalent level of safety.

(e) A component sample that has been subjected to qualification testing shall not be used for flight.

(f) Contingent upon approval by the FAA, the testing involved in qualifying a component's design may be reduced through qualification by similarity to tests performed on identical or similar hardware. A component ''A'' will be considered as a candidate for qualification based on similarity to component ''B'' that has already been qualified for use, under the following conditions:

(1) ''B'' shall have been qualified through testing, not by similarity.

(2) The environments encountered by ''B'' during its qualification or flight history must have been equal to or more severe than the qualification environments required for ''A.''

(3) ''A'' must be a minor variation of ''B.'' A launch operator shall describe the design differences in terms of weight, mechanical configuration, thermal effects, dynamic response, changes in piece part quality level, addition or subtraction of piece parts, including moving parts, ceramic or glass parts, crystals, magnetic devices, and power conversion or distribution equipment.

(4) ''A'' and ''B'' must perform the same functions, with ''A'' having equivalent or better capability with variations only in terms of performance such as accuracy, sensitivity, formatting, and input/output characteristics.

(5) ''A'' and ''B'' must be produced by the same manufacturer in the same location using identical tools and manufacturing processes.

(6) The time elapsed since last production of ''A'' and ''B'' must be no greater than three years.

(g) For any flight termination system component to be used for more than one flight, the component qualification tests must demonstrate that the component functions without degradation in performance when subjected to the qualification test environmental levels plus the total number of exposures to the maximum predicted environment levels for each of the flights to be flown. For each such component, a launch operator shall implement a component reuse qualification, refurbishment, and acceptance plan approved by the FAA through the licensing process.

E417.9 Qualification Non-Operating Environments

(a) *General.* A launch operator shall ensure that a flight termination system component functions according to its performance specifications when subjected to non-operating environments that the component will experience before flight. A launch operator shall demonstrate, by analysis or testing of test samples of a component, that the component will satisfy all of its performance specifications when subjected to test conditions that emulate each maximum predicted non-operating environment that the component would experience during storage, transportation, or installation and any other non-operating environment. Each test must emulate the actual configuration that the component will be in when exposed to the non-operating environment.

(b) *Storage temperature.* A component shall be tested to demonstrate its ability to satisfy its performance specifications when subjected to the maximum predicted high and low temperatures, thermal cycles, and thermal dwell times (time spent at the high and low temperatures) that the component would experience under storage conditions in accordance with the following:

(1) Thermal testing shall be performed at temperatures from 10 °C lower to 10 °C higher than the maximum predicted storage thermal range. The thermal rate of change from one thermal extreme to the other used during testing shall be no less than the maximum predicted thermal rate of change.

(2) All thermal dwell times used for qualification testing must be three times the maximum predicted storage environment. The number of thermal cycles used for qualification testing must be three times the maximum predicted storage environment.

(3) An analysis may be performed in lieu of storage temperature testing if the operating thermal cycle test is shown to be a more severe test. This may be accomplished by performing thermal fatigue equivalence calculations that demonstrate that the large change in temperature for a few thermal cycles experienced during flight is a more severe environment than the relatively small change in temperature for many thermal cycles that would be experienced during storage.

(c) *High temperature storage of ordnance.* For tests being performed to extend the service life of an ordnance component production lot, sample components from the production lot shall be tested to demonstrate that the performance of each component does not degrade after being subjected to +71 °C and 40 to 60 percent relative humidity for no less than 30 days.

(d) *Transportation shock test.* A component shall be tested to demonstrate that it satisfies its performance specifications after being subjected to the maximum predicted transportation induced shock levels that the component would experience in its transported configuration. Analysis may be performed in lieu of transportation shock testing if the operating environment shock testing is shown to be a more severe test.

(e) *Bench handling shock.* A component shall be tested to demonstrate that it satisfies its performance specifications after being subjected to maximum predicted bench handling induced shock levels. Component testing shall include drop testing from the maximum predicted handling height onto a representative surface in any orientation that could occur during servicing.

(f) *Transportation vibration.* A component shall be tested to demonstrate that it meets all performance specifications after being subjected to maximum predicted transportation induced vibration levels when in its transportation configuration.

(1) The transportation vibration tests shall include a three axis component test at the following levels for 60 minutes per axis:

(i) 0.01500 g^2/Hz at 10 Hz to 40 Hz.

(ii) 0.01500 g^2/Hz at 40 Hz to 0.00015 g^2/Hz at 500 Hz

(2) If the component is resonant below 10 Hz, the test vibration curve shall be extended to the lowest resonant frequency.

(3) Analysis may be performed in lieu of transportation vibration testing if the operating vibration test is shown to be a more severe test. This may be accomplished by performing vibration fatigue equivalence calculations that demonstrate that the high vibration levels with short duration experienced during flight is a more severe environment than the relatively low-vibration levels with long duration that would be experienced during transportation.

(g) *Fungus resistance.* A component shall be tested to demonstrate that it satisfies its performance specifications after being subjected to a fungal growth environment. Analysis may be performed in lieu of testing if it is shown that all unsealed and exposed surfaces do not contain fungus nutrient materials.

(h) *Salt fog.* A component that will be exposed to salt fog conditions while in service shall be tested to demonstrate that it satisfies its performance specifications after being subjected to the effects of a moist, salt-laden atmosphere. All externally exposed surfaces shall be tested to demonstrate the ability to withstand a salt-fog environment. Also, each internal part of a component shall be tested to demonstrate its ability to withstand a salt-fog environment unless the part is sealed and acceptance testing is performed on 100 percent of the part samples to verify that the seal works before the part sample is installed in a component.

(i) *Fine sand.* A component shall be tested to demonstrate that it satisfies its performance specifications after being subjected to the effects of dust or fine sand particles that may penetrate into cracks, crevices, bearings and joints. All externally exposed surfaces shall be tested to demonstrate the ability to withstand a fine sand environment. Also, each internal part of a component shall be tested to demonstrate its ability to withstand a fine sand environment unless the part is sealed and acceptance testing is performed on 100 percent of the part samples to verify that the seal works before the part sample is installed in a component.

(j) *Tensile load.* A component shall be tested to demonstrate its ability to withstand handling tensile and compression loads during transportation and installation without damage or degradation in performance. Qualification test loads shall be at twice the expected level or the following criteria, whichever is greater:

(1) For an explosive transfer system and associated fittings, a pull test shall be performed at no less than 100 lbs.

(2) For a destruct charge and associated fittings, a pull test shall be performed at no less than 50 lbs.

(3) Flight radio frequency connectors shall be pull tested at one-half the design specification.

(4) Electro explosive devices wires shall be pull tested to 18 pounds

(5) Exploding bridgewire devices electrical pins shall be tested to demonstrate the ability to withstand an 18-pound force in axial and compression modes.

(k) *Handling drop of ordnance.* An ordnance component shall be tested to demonstrate that its performance does not degrade after being subjected to the maximum predicted drop and resulting impact that could go undetected during storage, transportation, or installation or a six-foot drop onto a representative surface in any orientation that could occur during storage, transportation, or installation; whichever drop and resulting impact is more severe.

(l) *Abnormal drop of ordnance.* An ordnance component shall be tested to demonstrate that it does not initiate and is safe to handle, although it need not function, after being subjected to the maximum predicted drop that it could experience during storage, transportation, or installation, regardless of whether or not the drop could go undetected, or the applicable drop defined below onto a representative surface in any orientation that could occur during storage, transportation, or installation; whichever drop is more severe:

(1) For a safe and arm device with internal ordnance, the test must use a minimum drop height of 20 feet.

(2) For ordnance that is not internal to a safe and arm device, the test must use a minimum drop height of 40 feet.

E417.11 Qualification Operating Environments

(a) *General.* A launch operator shall ensure that a flight termination system component functions according to its performance specification when subjected to operating environments that the component will experience during acceptance testing, launch countdown, and flight. A launch operator shall demonstrate, by analysis or testing of test samples of a component in accordance with this section, that the component will meet all of its performance specifications during and after exposure to physical environments that flight components will experience during acceptance testing and during launch countdown and flight. For ordnance components, the testing requirements of this section apply to qualification, age surveillance and lot acceptance testing.

(b) *Qualification sinusoidal vibration.* Each component, whether hard-mounted or isolator mounted, and any isolator, grounding strap, bracket, explosive transfer system, and flight cable to the first tie-down that interface with the component, shall be tested to demonstrate their ability to satisfy their performance specifications when subjected to qualification sinusoidal vibration environments that are more severe than the workmanship and maximum predicted flight sinusoidal vibration environments satisfy the following:

(1) The qualification sinusoidal vibration test level shall be 6dB greater than the maximum predicted environment.

(2) Test duration for each of three axes must be no less than three times the maximum predicted duration. The sinusoidal sweep rate used for the test must be no less than three times the maximum predicted sweep rate on each of three axes.

(3) The test tolerance used shall be ±10%.

(4) The sinusoidal frequency range shall be the maximum predicted environment frequency range, plus and minus 50%.

(5) Analysis may be performed in lieu of testing if a launch operator demonstrates that the qualification operating random vibration testing, performed in accordance with paragraph (c) of this section, envelops the qualification test sinusoidal vibration levels. For this analysis, the peak random vibration levels, as a function of time, must envelop the sinusoidal qualification test levels and duration.

(6) All performance and status-of-health parameters shall be continuously monitored and recorded during testing with a resolution of no less than one millisecond.

(c) *Qualification random vibration.* Each component, whether hard-mounted or isolator mounted and any isolator, grounding strap, bracket, explosive transfer system, and flight cable to the first tie-down that interface with the component shall be tested to demonstrate their ability to satisfy their performance specifications when subjected to qualification random vibration environments that are more severe than the workmanship and maximum predicted flight random vibration environments. The qualification random vibration environments and testing must satisfy the following:

(1) For each component required by this appendix to undergo 100% acceptance testing, the qualification random vibration testing must maintain no less than a 3dB margin between the minimum qualification test level and the maximum acceptance test level from 20 Hz to 2000 Hz. For the random vibration tests required by this appendix to have a test tolerance of ±1.5dB, the qualification test random vibration level must be the acceptance test level plus 6 dB.

(2) For each component that is required by this appendix to be lot acceptance tested or that is not individually acceptance tested, such as ordnance and any silver-zinc battery, the qualification random vibration testing must maintain no less than a 4.5dB margin between the minimum qualification test level and the greater of the maximum predicted environment or the minimum workmanship test level from 20 Hz to 2000 Hz. Minimum workmanship levels are provided in table E417.11–1. For the random vibration tests required by this appendix to have a test tolerance of ±1.5dB, the qualification random vibration test level must be the greater of the maximum predicted environment or the minimum workmanship test level, plus 6 dB.

(3) For a component using vibration isolators, the component and isolators shall be tested as one unit to the qualification levels required by paragraphs (c)(1) and (c)(2) of this section. In addition, the component, without isolators, shall be tested to the minimum workmanship levels of table E417.11–1.

(4) The test duration, in each of three mutually perpendicular axes, must last three times as long as the acceptance test duration or minimum workmanship qualification duration of 180 seconds, whichever is greater.

(5) Qualification tests and acceptance tests shall be performed using identical test configuration and methods.

(6) Performance verification tests shall be performed while the component is subjected to the qualification random vibration environment. Where the duration of the qualification random vibration environment is such that there is insufficient time to complete the testing of all functions and modes while the component is subjected to the full qualification random vibration level, extended testing at the acceptance random vibration level shall be conducted as necessary to complete functional testing.

(7) All performance and status-of-health parameters shall be continuously monitored and recorded during testing with a resolution of no less than one millisecond. This testing shall be performed at nominal operating voltage, where applicable.

(8) Random vibration testing may be used in lieu of testing for other dynamic qualification test environments, such as acceleration, acoustic and sinusoidal vibration if the launch operator demonstrates that the required forces, displacements, and test duration imparted on a component during random vibration testing are equal to or more severe than the other qualification test environment.

TABLE E417.11–1.—MINIMUM WORKMANSHIP POWER SPECTRAL DENSITY FOR QUALIFICATION RANDOM VIBRATION TESTING

Frequency range (Hz)	Minimum power spectral density
20	0.021 g^2/Hz.
20–150	3 dB/octave slope.
150–600	0.16 g^2/Hz.
600–2000	−6 dB/octave slope.
2000	0.014 g^2/Hz.
Overall G_{rms} = 12.2	

(d) *Qualification acoustic.* Each component, whether hard-mounted or isolator mounted, and any isolator, grounding strap, bracket, explosive transfer system, and flight cable to the first tie-down, that interface with the component shall be tested to demonstrate their ability to satisfy their performance specifications when subjected to qualification acoustic environments that are more severe than the workmanship and maximum predicted flight acoustic environments. The qualification acoustic environments and testing shall satisfy the following:

(1) For each component required by this appendix to undergo 100% acoustic acceptance testing, the qualification acoustic vibration testing must maintain a positive margin between the minimum qualification test level and the maximum acceptance test level from 20 Hz to 2000 Hz. For the random acoustic vibration tests required by this appendix to have a tolerance of ±3 dB, the qualification test level must be the acceptance test level plus 6 dB.

(2) For each component that is not required by this appendix to be individually acoustic acceptance tested, such as ordnance and any silver-zinc battery, the qualification acoustic vibration testing must maintain no less than a 3 dB margin between the minimum qualification test level and the greater of the maximum predicted environment or the minimum workmanship test level of 144 dBA from 20 Hz to 2000 Hz. For the acoustic vibration tests required by this appendix to have a tolerance of ±3.0 dB, the test level must be the greater of the maximum predicted environment or the minimum workmanship test level, plus 6 dB.

(3) For a component using one or more vibration isolators, the component and isolators shall be tested as one unit to the qualification levels required by paragraphs (d)(1) and (d)(2) of this section. In addition, the component, without isolators, shall be tested to no less than the minimum workmanship level of 144 dBA.

(4) All performance and status-of-health parameters shall be continuously monitored and recorded during testing with a resolution of no less than one millisecond.

(5) Analysis may be performed in lieu of testing if a launch operator demonstrates that the qualification operating random vibration testing performed in accordance with paragraph (c) of this section envelops the qualification acoustic environments. For this analysis, the peak random vibration levels, as a function of time, must envelop the qualification acoustic levels and duration.

(e) *Qualification shock.* Each component, whether hard mounted or isolator mounted, and any isolator, grounding strap, bracket, explosive transfer system, and flight cable to the first tie-down that interface with the component, shall be tested to demonstrate their ability to satisfy their performance specifications when subjected to qualification shock environments that are more severe than the maximum predicted flight shock environments. The qualification shock environments and testing must satisfy the following:

(1) Qualification shock testing must maintain no less than a 3.0 dB margin between the minimum qualification test shock level and the greater of the maximum predicted environment or the minimum workmanship test levels from 100 Hz to 10000 Hz. The minimum workmanship shock levels as a function of frequency are provided in table E417.11–2. For a shock test required by this appendix to have a -3 dB lower tolerance, the qualification test level shall be the greater of the maximum predicted environment or the minimum workmanship test level, plus 6 dB.

(2) The applied shock transient must provide a simultaneous application of all frequencies. It must not provide a serial application of the frequencies.

(3) A component shall be subjected to three shocks in each direction along each of the three orthogonal axes.

(4) The shock duration must simulate the maximum predicted event.

(5) A component's critical performance parameters shall be continuously monitored for discontinuities or inadvertent output while the component is subjected to the shock environment. Any discontinuity or inadvertent output constitutes a test failure.

(6) All performance and status-of-health parameters shall be continuously monitored and recorded during testing with a resolution of no less than one millisecond.

TABLE E417.11–2.—MINIMUM WORKMANSHIP QUALIFICATION SHOCK LEVEL

Frequency range (Hz)	Minimum acceleration spectral density
100	100 G.
2000	1300 G.
10000	1300 G.
Q=10	

(f) *Qualification acceleration.* Each component, whether hard-mounted or isolator mounted, and any isolator, grounding strap, bracket, explosive transfer system, and flight cable to the first tie-down that interface with the component, shall be tested to demonstrate their ability to satisfy their performance specification when subjected to qualification acceleration environments that are more severe than the flight acceleration environments. The qualification acceleration environments and testing must satisfy the following:

(1) The acceleration test level must be no less than two times the maximum predicted environment.

(2) The duration of the acceleration must last three times the duration of the maximum predicted environment in each direction for each of the three orthogonal axes.

(3) If the test tolerance used is more than ±10%, an appropriate factor must be added to the qualification acceleration test level to maintain the margin between the maximum predicted environment and the qualification level required by paragraph (f)(1) of this section.

(4) Analysis may be performed in lieu of testing if a launch operator demonstrates that the qualification operating random vibration testing performed in accordance with paragraph (c) of this section envelops the qualification acceleration environments. For this analysis, the peak random vibration levels, as a function of time, must envelop the qualification acceleration levels and duration.

(5) All performance and status-of-health parameters must be continuously monitored and recorded during testing with a resolution of no less than one millisecond.

(g) *Qualification humidity.* A component shall be tested to demonstrate that it satisfies its performance specifications when subjected to the maximum expected relative humidity environment that could occur during storage and transportation and when installed. The qualification humidity environments and testing must satisfy the following:

(1) Humidity testing must include at least four thermal cycles while being exposed to a 100% relative humidity environment.

(2) Electrical performance tests shall be conducted at the cold, ambient, and hot temperatures during the first, middle and last thermal dwell cycles.

(3) All performance and status-of-health parameters shall be continuously monitored and recorded during testing with a resolution that detects component performance degradation for all cycles and thermal transitions.

(h) *Qualification thermal cycle.* A component shall be tested to demonstrate that it satisfies its performance specifications when subjected to workmanship, preflight, and flight thermal environments. Each component must meet its performance specifications when subjected to qualification thermal cycle environments in accordance with the following:

(1) *Electronic components.* The following qualification thermal cycle test requirements apply to all command receiver decoders and any other electronic component that contains piece-part circuitry, such as microcircuits, transistors, diodes and relays.

(i) The qualification thermal cycle must range from the acceptance test high temperature plus 10°C to the acceptance test low temperature minus 10°C.

(ii) The component must be subjected to no fewer than 24 thermal cycles. For each cycle, the dwell times at the high and low temperatures must be long enough for the component to achieve internal thermal equilibrium and must be no less than one hour. During each dwell time at the high and low temperatures, the component shall be turned off until the temperature stabilizes and then turned on.

(iii) The thermal rate of change between the low and high temperatures shall be an average rate of 1 °C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests shall be conducted at the component's low and high operating voltage when the component is at the high, ambient, and low temperatures during the first, middle and last thermal dwell cycles.

(v) Critical performance and status-of-health parameters shall be continuously monitored and recorded with a resolution that detects component performance degradation. These tests shall be performed at the nominal operating voltage for all cycles and thermal transitions.

(2) *Passive components.* A passive component is any component that does not contain active electronic piece parts. Passive components include, but need not be limited to, radio frequency antennas; rechargeable batteries, such as nickel cadmium batteries; couplers; and cables. Qualification thermal cycle tests for passive components must satisfy the following:

(i) The qualification thermal cycle must range from the acceptance test high temperature plus 10°C to the acceptance test low temperature minus 10°C.

(ii) The component must be subjected to no fewer than 24 thermal cycles. For each cycle, the dwell times at the high and low temperatures must be long enough for the component to achieve internal thermal equilibrium and must last no less than one hour.

(iii) The thermal rate of change between the low and high temperatures shall be an average rate of 1°C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests shall be conducted when the component is at the high, ambient, and low temperatures during the first, middle, and last thermal cycles.

(v) Critical performance and status-of-health parameters shall be continuously monitored and recorded with a resolution that detects component performance degradation. These tests shall be performed for all cycles and thermal transitions.

(3) *Silver zinc batteries.* Qualification thermal cycle tests for a flight termination system silver-zinc battery shall satisfy the following:

(i) The qualification thermal cycle must range from the maximum predicted high temperature plus 10°C to the maximum predicted low temperature minus 5.5°C.

(ii) The battery must be subjected to no fewer than eight thermal cycles. For each cycle, the dwell times at the high and low temperatures must be long enough for the battery to achieve internal thermal equilibrium and must be no less than one hour.

(iii) The thermal rate of change between the low and high temperatures must be an average rate of 1 °C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests shall be conducted when the battery is at the high, ambient, and low temperature during the first, middle, and last thermal cycle.

(v) Critical performance and status-of-health parameters shall be continuously monitored and recorded for all thermal cycles and transitions with a resolution that detects component performance degradation.

(4) *Electro-mechanical safe and arm devices with internal explosives:*

(i) The qualification thermal cycle must range from the acceptance test high temperature plus 10°C to the acceptance test low temperature minus 10°C.

(ii) The component shall be subjected to no fewer than 24 thermal cycles. For each cycle, the dwell times at the high and low temperatures must be long enough for the component to achieve internal thermal equilibrium and must last no less than one hour.

(iii) The thermal rate of change between the low and high temperatures must be an average rate of 1°C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests shall be performed when the component is at the high, ambient, and low temperatures during the first, middle, and last thermal cycles.

(v) All performance and status-of-health parameters shall be continuously monitored and recorded at all temperature cycles and transitions using a resolution that detects component performance degradation.

(5) *Ordnance components.* Qualification thermal cycle tests for ordnance components must satisfy the following:

(i) The qualification thermal cycle must range from the maximum predicted high temperature plus 10°C, or 71°C, whichever is higher, to the predicted low temperature minus 10°C, or −54°C, whichever is lower.

(ii) The ordnance component must be subjected to no fewer than eight thermal cycles. For an ordnance component that is used inside a safe and arm device, the ordnance component must be subjected to 24 thermal cycles. For each cycle, the dwell times at the high and low temperatures must be long enough for the component to achieve internal thermal equilibrium and must last no less than two hours.

(iii) The thermal rate of change between the low and high temperatures must be an average rate of 3°C per minute or the maximum predicted rate whichever is greater.

(i) *Qualification thermal vacuum.* A component shall be tested to demonstrate that it satisfies its performance specifications, including structural integrity, when it is subjected to a combination of altitude and thermal environments in accordance with the following:

(1) The qualification thermal vacuum temperatures must be at the acceptance test high temperature plus 10°C and the acceptance test low temperature minus 10°C.

(2) The pressure gradient must be the maximum predicted rate of altitude change that will be experienced during flight. The final vacuum dwell time must be long enough for the component to achieve pressure equilibrium.

(3) The number of thermal cycles must be three times the maximum predicted thermal cycles. These thermal cycles shall be performed during the final vacuum dwell time.

(4) Performance verification tests shall be performed using the component's low and high operating voltage and when the component is at the high, ambient, and low temperatures during the first, middle and last thermal cycles.

(5) Critical performance and status-of-health parameters shall be continuously monitored and recorded during chamber pressure reduction and the final vacuum dwell time, using a resolution that detects component performance degradation. This test must be performed at the high operating voltage for all cycles and thermal transitions.

(6) Analysis may be performed in lieu of testing in accordance with the following:

(i) For a low voltage component, less than 50 volts, analysis may be performed in lieu of testing if the analysis demonstrates that the component is not susceptible to corona, arcing, or structural failure.

(ii) For a high voltage component, greater than 50 volts, thermal vacuum testing shall be performed unless the component is environmentally sealed and analysis demonstrates that any low voltage externally exposed part is not susceptible to corona, arcing, or structural failure. A component with any high voltage externally exposed part shall be subjected to thermal vacuum testing.

(j) *Electromagnetic interference and electromagnetic compatibility.* A component shall be tested to demonstrate that it does not degrade in performance when subjected to radiated or conducted emissions from all flight vehicle systems and external ground transmitter sources. In addition, a component shall not radiate or conduct electromagnetic interference that would degrade the performance of any other flight termination system component.

(k) *Explosive atmosphere.* A launch operator shall demonstrate, through testing or analysis, that a component operates in an explosive atmosphere without creating an explosion.

E417.13 Acceptance Testing

(a) *General.* Each flight termination system component that is to be flown on a launch vehicle must undergo acceptance tests in accordance with this section. Each component shall be tested to detect any material and workmanship defects and to demonstrate its ability to satisfy its performance specifications when exposed to each maximum predicted environment that the component will be exposed to during flight. A component that fails to pass any acceptance test shall not be used for flight.

(1) Each acceptance test must be conducted at all maximum predicted environments determined in accordance with § 417.307. Each component must withstand the environmental acceptance test conditions without physical damage or violating its performance specifications.

(2) Each acceptance test must be performed on all flight termination system component samples that are intended for flight use except for single-use components such as ordnance and batteries, which shall be subjected to production lot sample acceptance tests. The specific tests to be performed and the number of single-use components to be tested shall be in accordance with the acceptance test and lot sample acceptance test matrices provided in this appendix unless the launch operator clearly and convincingly demonstrates that a proposed alternative provides an equivalent level of safety.

(3) Reuse acceptance tests shall be performed on any previously flown and recovered flight termination system component to demonstrate that the component still functions without degradation in performance when subjected to all maximum predicted environments if the component is to be reused. A reused component shall be subjected to the same tests performed for initial acceptance testing unless the launch operator demonstrates, clearly and convincingly, that a proposed alternative provides an equivalent level of safety. For each such component, a launch operator shall implement a component reuse qualification, refurbishment, and acceptance plan approved by the FAA through the licensing process. Performance parameter measurements taken during reuse acceptance tests shall be compared to previous acceptance test measurements to ensure there are no data trends that indicate degradation in performance.

(b) *Acceptance random vibration.* A component shall be tested to demonstrate that it satisfies performance specifications when exposed to workmanship or maximum predicted random vibration levels in accordance with the following:

(1) Random vibration testing shall be performed at the greater of the maximum predicted random vibration level or the minimum workmanship acceptance test level provided in table E417.13–1, from 20 Hz to 2000 Hz in all three axes.

(2) The component shall be subjected to the acceptance random vibration environment for a duration that is the greater of three times the maximum predicted duration or a minimum workmanship screening level of 60 seconds, per axis.

(3) Acceptance tests and qualification tests shall be performed using identical test configurations and methods.

(4) Performance verification tests shall be performed while the component is subjected to the acceptance random vibration environment. Where the duration of the acceptance random vibration environment is such that there is insufficient time to complete testing of all functions and modes while the component is subjected to the full acceptance random vibration level, extended testing at a random vibration level 6 dB lower shall be conducted as necessary to complete the functional testing.

(5) Each acceptance test tolerance must be consistent with the tolerances established for qualification operating environmental test tolerances established in accordance with E417.11.

(6) Performance and status-of-health parameters shall be continuously monitored with a resolution of no less than one millisecond. These tests shall be performed at nominal operating voltage, where applicable.

TABLE E417.13–1.—MINIMUM WORKMANSHIP POWER SPECTRAL DENSITY FOR ACCEPTANCE RANDOM VIBRATION

Frequency range	Minimum power spectral density
20	0.0053 g^2/Hz.
20–150	3 dB/Octave Slope.
150–600	0.04 g^2Hz.
600–2000	−6 dB/Octave Slope.
2000	0.0036 g^2/Hz.
Overall G_{rms}=6.1	

(c) *Acceptance acoustic.* A component shall be tested to demonstrate that it satisfies its performance specifications when exposed to workmanship or maximum predicted acoustic vibration levels in accordance with the following:

(1) An acceptance acoustic vibration level must be no less than the maximum predicted acoustic level from 20 Hz to 2000 Hz.

(2) The acceptance acoustic duration must be the greater of the maximum predicted acoustic duration or 60 seconds, per axis, in three mutually perpendicular axes.

(3) Performance verification tests shall be performed while the component is subjected to the acceptance acoustic environment. Where the duration of the acceptance acoustic environment is such that there is insufficient time to complete the testing of all functions and modes while the component is subjected to the full acceptance test level, extended testing at a level 6 dB lower shall be conducted as necessary to complete the functional testing.

(4) Analysis may be performed in lieu of testing if the launch operator demonstrates that the operating random vibration level envelops the acceptance acoustic levels and duration.

(5) Each acceptance test tolerance must be consistent with the qualification operating environmental test tolerances established in accordance with E417.11.

(6) All performance and status-of-health parameters shall be continuously monitored with a resolution of no less than one millisecond. This testing shall be performed at nominal operating voltage, where applicable.

(d) *Acceptance thermal cycle.* A component shall be tested to demonstrate that it meets performance specifications when exposed to workmanship or maximum predicted thermal levels in accordance with the following:

(1) *Electronic components.* Each acceptance thermal cycle test for an electronic component must satisfy the following:

(i) The acceptance thermal cycle test temperatures must range from the maximum predicted environment high temperature or a 61°C-workmanship screening level, whichever is higher, to the predicted low temperature or a −24°C-workmanship screening level, whichever is lower.

(ii) The component shall be subjected to no fewer than 18 thermal cycles. For each cycle, the dwell times at the high and low temperatures shall be long enough for the component to achieve internal thermal equilibrium and must be no less than one hour. During each dwell time at the high and low temperatures, the component shall be turned off until the temperature stabilizes and then turned on.

(iii) The thermal rate of change between the low and high temperatures must be an average rate of 1°C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests, including functional tests, shall be performed while at the component's low and high operating voltage and while the component is at the high, ambient, and low temperatures during the first, middle, and last thermal cycles.

(v) Critical performance and status-of-health parameters shall be continuously monitored and recorded with a resolution that detects component performance degradation. This test shall be performed at the nominal operating voltage for all cycles and thermal transitions.

(2) *Passive components.* A passive component is any component that does not contain active electronic piece parts. Passive components include, but need not be limited to, radio frequency antennas; couplers; rechargeable batteries, such as nickel cadmium batteries; and cables. Acceptance thermal cycle tests for passive components must satisfy the following:

(i) Unless otherwise noted, the acceptance thermal cycle test temperatures must range from the maximum predicted environment high temperature or a 61°C-workmanship screening temperature, whichever is higher, to the predicted low temperature or a −24°C-workmanship screening temperature, whichever is lower.

(ii) The component must be subjected to no fewer than eight thermal cycles. The dwell times at the high and low temperatures must be long enough for the component to achieve internal thermal equilibrium and must be no less than one hour.

(iii) The thermal rate of change between the low and high temperatures must be an average rate of at least 1°C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests, including functional tests, shall be performed while the component is at the high, ambient, and low temperatures during the first, middle, and last thermal cycles.

(v) Critical performance and status-of-health parameters shall be continuously monitored and recorded during all thermal cycles and transitions with a resolution that detects any component performance degradation.

(3) *Electro-mechanical safe and arm devices with internal explosives.* Each acceptance thermal cycle test for electro-mechanical safe and arm devices with internal explosives must satisfy the following:

(i) The acceptance thermal cycle temperatures must range from the maximum predicted environment high temperature or the minimum workmanship screening temperature of 61°C, whichever is higher, to the predicted low temperature or the minimum workmanship screening temperature of −24°C, whichever is lower.

(ii) The component must be subjected to no fewer than eight thermal cycles. For each cycle, the dwell times at the high and low temperatures must be long enough for the component to achieve internal thermal equilibrium and must be no less than one hour.

(iii) The thermal rate of change between low and high temperatures must be an average rate of 1°C per minute or the maximum predicted rate, whichever is greater.

(iv) Performance verification tests, including functional tests of critical electrical parameters, shall be performed while the component is at the high, ambient, and low temperatures during the first, middle, and last thermal cycles.

(v) Critical performance and status-of-health parameters shall be continuously monitored and recorded during all thermal cycles and transitions with a resolution that detects component performance degradation.

(e) *Acceptance thermal vacuum.* A component shall be tested to demonstrate that it meets performance specifications when exposed to workmanship or maximum predicted thermal and altitude environments in accordance with the following:

(1) The acceptance thermal vacuum temperatures must range from the maximum predicted environment high temperature or the workmanship screening high temperature of 61°C, whichever is higher, to the predicted low temperature or the workmanship screening low temperature of −24°C, whichever is lower.

(2) The pressure gradient must be the maximum predicted rate of altitude change that will be experienced during flight. The pressure gradient must allow for no less than ten minutes for reduction of chamber pressure at the pressure zone from ambient to 20 Pascal. The final vacuum dwell time must be long enough for the component to achieve pressure equilibrium and must be no less than the maximum predicted dwell time or 12 hours, whichever is greater.

(3) An acceptance thermal cycle test shall be performed during the final vacuum dwell time. The number of thermal cycles must be the maximum predicted number of cycles.

(4) Performance verification tests, including functional tests, shall be performed during the final vacuum dwell time at the component's low and high operating voltage and while the component is at the high, ambient, and low temperatures during the first, middle, and last thermal cycles.

(5) Critical performance and status-of-health parameters shall be continuously monitored during chamber pressure reduction and during the final vacuum dwell time using the component's high operating voltage and a resolution that detects component performance degradation.

(6) Analysis may be performed in lieu of testing in accordance with the following:

(i) For a low voltage component, a component that operates at less than 50 volts, analysis may be performed in lieu of testing if the analysis demonstrates that the component is not susceptible to corona, arcing, or structural failure.

(ii) For a high voltage component, a component that operates at 50 volts or more, thermal vacuum testing shall be performed unless the component is hermetically sealed or pressurized and the analysis demonstrates that any low voltage externally exposed part is not susceptible to corona, arcing, or structural failure. A component with any high voltage externally exposed part shall be subjected to acceptance thermal vacuum testing.

(f) *Tensile loads.* A component shall be tested to demonstrate its ability to withstand handling tensile loads during transportation and installation without damage or degradation of performance. An acceptance tensile load test shall be conducted at twice the maximum predicted pull-force that could occur during normal or improper handling.

E417.15 Age Surveillance Testing

(a) *General.* A launch operator shall perform age surveillance testing in accordance with this section and the test matrices provided in this appendix to verify or extend the storage, operating, or service life of a component established in accordance with § 417.305(h). For a single use component, such as ordnance, the component's initial service life shall be established by the lot acceptance testing required by this appendix for the specific component.

(b) *Ordnance age surveillance tests.* A launch operator shall ensure that each ordnance component, any component that contains ordnance or is used to directly initiate ordnance, functions within its performance specification throughout its specified service life. Service life starts upon completion of the initial production lot sample acceptance tests and includes both storage and time after installation until completion of flight. Age surveillance tests shall be performed to extend an ordnance component's service life in accordance with the following:

(1) The number of ordnance components to be tested, the specific tests to be performed for age surveillance tests, and the number of years that the service life may be extended shall be in accordance with the ordnance lot acceptance and age surveillance test matrices provided in this appendix.

(2) All samples used for ordnance age surveillance testing must be from the same lot and must consist of identical parts and materials and be manufactured through identical processes. These samples must be stored with the ordnance components to be used for flight or in an environment that duplicates flight ordnance component's storage conditions.

(c) *Battery storage surveillance tests.* A launch operator shall ensure that each battery functions within its performance specification throughout its specified service life. Service life starts upon completion of the initial production acceptance tests and includes both storage and time after installation until completion of flight. Battery storage life may be extended with testing specified in the matrices provided in this appendix.

(d) *Electronic component age surveillance tests.* A launch operator shall ensure that each electronic component functions within its performance specifications throughout its specified service life. Service life starts upon completion of the initial production acceptance tests and includes both storage and operating life, which begins upon installation on a launch vehicle. An electronic component whose storage, operating life, or service life has been exceeded shall not be used for flight, unless the launch operator identifies proposed age surveillance testing and demonstrates, clearly and convincingly through the licensing process, that the proposed testing provides an equivalent level of safety.

E417.17 Radio Frequency Receiving System

(a) *General.* A radio frequency receiving system includes each flight termination system antenna and radio frequency coupler and any radio frequency cable or other passive device used to connect a flight termination system antenna to a command receiver. A radio frequency receiving system shall be tested to demonstrate that it delivers command control system radio frequency energy to each flight termination system receiver when subjected to non-operating and operating environments and performance degradation sources such as command control system transmitter variations, non-nominal launch vehicle flight conditions, and flight termination system performance variations. This testing shall be accomplished in accordance with the acceptance and qualification test matrices and the accompanying requirements of this section.

TABLE E417.17–1

Radio frequency receiving system acceptance tests	Reference E417.13	Quantity (in percent)		
		Cable	Coupler	Antenna
Component Examination	E417.5			
Visual Inspection	E417.5(b)	100	100	100
Dimension	E417.5(c)	100	100	100
Identification	E417.5(e)	100	100	100
Performance Verification [1]	E417.3(e)			
Status-of-Health	E417.17(b)			100
Link Performance	E417.17(c)	100	100	
Isolation	E417.17(d)		100	
Abbreviated Antenna Pattern [2]	E417.17(g)			100
Abbreviated Performance Verification	E417.3(f)			
Abbreviated Status of Health [2]	E417.17(e)	100	100	100
Operating Environment Tests	E417.13			
Thermal Cycling	E417.13(d)	100	100	100
Acoustic	E417.13(c)		100	100
Random Vibration	E417.13(b)		100	100
Tensile Load	E417.13(f)	100		

[1] This test shall be performed prior to the first and after the last operating environment test.
[2] These tests shall be performed prior to and after each operating environment test.

TABLE E417.17–2

Radio frequency receiving system qualification tests	Reference E417.7	Quantity [6]		
		Cable X=3	Coupler X=3	Antenna X=3
Acceptance Tests [1]	Table E417.17–1	X	X	X
Antenna Patterns [2]	E417.17(f)	X	X	X
Abbreviated Antenna Pattern	E417.17(g)			X
Performance Verification [3]	E417.3(e)			
Status-of-Health	E417.17(b)			X
Link Performance	E417.17(c)	X	X	
Isolation	E417.17(d)		X	
Non-Operating Environment Tests	E417.9			
Storage Temperature	E417.9(b)	X	X	X
Transportation Shock	E417.9(d)	X	X	X
Bench Handling Shock	E417.9(e)	X	X	X
Transportation Vibration	E417.9(f)	X	X	X
Fungus Resistance	E417.9(g)	1	1	1
Salt Fog	E417.9(h)	1	1	1
Fine Sand	E417.9(i)	1	1	1
Abbreviated Performance Verification [4]	E417.3(f)			
Abbreviated Status-of-Health	E417.17(e)	X	X	X
Operating Environment Tests [5]	E417.11			
Thermal Cycling	E417.11(h)	X	X	X
Humidity	E417.11(g)	X	X	X
Acceleration	E417.11(f)	X	X	X
Shock	E417.11(e)	X	X	X
Sinusoidal Vibration	E417.11(b)	X	X	X
Acoustic	E417.11(d)	X	X	X
Random Vibration	E417.11(c)	X	X	X
Tensile Load	E417.9(j)	X		
Abbreviated Antenna Pattern	E417.17(g)			X
Disassembly	E417.5(g)		X	X

[1] Each sample component to undergo qualification testing must first successfully complete all applicable acceptance tests.
[2] This test is performed of the radio frequency receiving system including the antenna, radio frequency cables, and radio frequency coupler.
[3] These tests shall be performed before the first and after the last non-operating environment test and before the first and after the last operating environment test.
[4] These tests shall be performed during the operating environment tests.
[5] For these tests, flight radio frequency cables shall be attached to each component in the flight configuration.
[6] The same three sample components shall be subjected to each test designated with an X. For tests designated with a quantity of less than three, each sample component tested shall be selected from the original three sample components.

(b) *Status-of-health.* Radio frequency components and subsystems shall be subjected to status-of-health tests performed in accordance with E417.3(g). Status-of-health tests of radio frequency components and subsystems shall include antenna voltage standing wave ratio testing that measures the assigned operating frequency at the high and low frequencies of the operating bandwidth.

(c) *Link performance.* All radio frequency components and subsystems shall be tested to demonstrate that they function within their design specification when subjected to performance degradation caused by ground transmitter variations and non-nominal vehicle flight. Link performance tests must satisfy the following:

(1) Testing shall be performed to demonstrate the ability of the radio frequency receiving system to provide command signals to each command destruct receiver at an electromagnetic field intensity of 12 dB above the level required for reliable receiver operation over 95% of the antenna radiation sphere surrounding the launch vehicle.

(2) Radio frequency coupler insertion loss and voltage standing wave ratio shall be measured at the assigned operating frequency and at the high and low frequencies of the operating bandwidth.

(3) Cable insertion loss shall be measured at the assigned operating frequency and at the high and low frequencies of the operating bandwidth.

(d) *Isolation.* Tests shall be performed to demonstrate that couplers isolate redundant antennas and receiver decoders from one another such that an open or short-circuit in one string of the redundant system, antenna or receiver decoder, will not prevent functioning of the other side of the redundant system. The tests must demonstrate that the isolation is in accordance with the isolation design specification and that it is in-family.

(e) *Abbreviated status-of-health.* While a component is under environmental stress conditions, testing shall be performed to verify the voltage standing wave ratio and any other critical performance parameter that acts as an indicator of an internal anomaly. Critical performance parameters shall be continuously monitored during environmental testing to detect variations in amplitude with a 0.1-millisecond accuracy. Any unexplained variations shall be considered a test failure.

(f) *Antenna patterns.* Testing shall be performed as part of qualification testing to demonstrate that the radiation gain pattern of the entire radio frequency receiving system, including the antenna, radio frequency cables, and radio frequency coupler will meet the system's performance specifications during vehicle flight in accordance with the following:

(1) Testing shall be performed to demonstrate a link margin of no less than 12 dB over 95 percent of the antenna radiation sphere surrounding the launch vehicle.

(2) Testing shall emulate flight conditions, including ground transmitter polarization.

(3) Radiation pattern testing shall be performed on a simulated flight vehicle utilizing a flight configured radio frequency command destruct system. The increments used to determine an antenna pattern must be sufficient to identify any deep pattern null and to verify that the required 12dB link margin is maintained throughout flight. The increments used for antenna pattern determination shall be no less than two degrees.

(4) Antenna patterns determined as a result of testing shall be recorded in a data format that is compatible with the format needed to perform the flight safety system radio frequency link analysis required in § 417.329(h).

(g) *Abbreviated antenna pattern.* Abbreviated antenna pattern testing shall be performed on just the antenna as part of qualification and acceptance testing using a standard ground plane test fixture. This testing shall be performed before and after exposure to qualification and acceptance test environments to determine any pattern changes that may occur due to damage resulting from exposure to the test environments. Gain measurements shall be taken and shall include, but need not be limited to, radiation pattern measurements in the 0° and 90° plane vectors along with a conical cut at 80°. The test configuration need not generate antenna pattern data that is representative of the actual system-level patterns.

E417.19 Command Receiver Decoder

(a) *General.* A command receiver decoder shall be tested to demonstrate that it functions according to its performance specification when subjected to non-operating and operating environments and command control system transmitter variations. This testing shall be accomplished in accordance with the acceptance and qualification test matrices and accompanying requirements of this section. A command receiver decoder must undergo all tests identified by each matrix in this section and in the manner identified.

TABLE E417.19–1

Command receiver decoder acceptance tests	Reference E417.13	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Identification	E417.5(e)	100
Performance Verification [1]	E417.3(e)	
Status-of-health	E417.19(b)	100
Functional Performance	E417.19(c)	100
Radio Frequency Processing	E417.19(e)	100
Decoder Logic	E417.19(f)	100
Abbreviated Performance Verification	E417.3(f)	
Input Current Monitor [2]	E417.19(g)	100
Output Functions [2]	E417.19(h)	100
Radio Frequency Level Monitor [2]	E417.19(i)	100
Thermal Performance Testing [3]	E417.19(j)	100
Operating Environment Tests	E417.13	
Thermal Cycling	E417.13(d)	100
Thermal Vacuum	E417.13(e)	100
Acoustic	E417.13(c)	100
Random Vibration	E417.13(b)	100
Leakage	E417.5(h)	100

[1] These tests shall be performed prior to the first and after the last operating environment test.
[2] These tests shall be performed during vibration and acoustic operating environment test.
[3] These tests shall be performed during operating thermal cycle and thermal vacuum testing.

TABLE E417.19–2

Command receiver decoder qualification tests	Reference E417.7	Quantity [5] X=3
Acceptance Tests [1]	Table E417.19–1	X

TABLE E417.19–2—Continued

Command receiver decoder qualification tests	Reference E417.7	Quantity [5] X=3
Performance Verification [2]	E417.3(e)	
Status-of-health	E417.19(b)	X
Functional Performance	E417.19(c)	X
Radio Frequency Processing	E417.19(e)	X
Decoder Logic	E417.19(f)	X
Non-Operating Environment Tests	E417.9	
Storage Temperature	E417.9(b)	X
Transportation Shock	E417.9(d)	X
Bench Handling Shock	E417.9(e)	X
Transportation Vibration	E417.9(f)	X
Fungus Resistance	E417.9(g)	1
Salt Fog	E417.9(h)	1
Fine Sand	E417.9(i)	1
Abbreviated Performance Verification	E417.3(f)	
Input Current Monitor [3]	E417.19(g)	X
Output Functions [3]	E417.19(h)	X
Radio Frequency Level Monitor [3]	E417.19(i)	X
Thermal Performance Testing [4]	E417.19(j)	X
Operating Environment Tests	E417.11	
Thermal Cycling	E417.11(h)	X
Humidity	E417.11(g)	X
Thermal Vacuum	E417.11(i)	X
Acceleration	E417.11(f)	X
Shock	E417.11(e)	X
Sinusoidal Vibration	E417.11(b)	X
Acoustic	E417.11(d)	X
Random Vibration	E417.11(c)	X
Electromagnetic Interference and Compatibility	E417.11(j)	2
Explosive Atmosphere	E417.11(k)	1
Leakage	E417.5(h)	X
Circuit Protection Test	E417.19(d)	X
Disassembly	E417.5(g)	X

[1] Each sample component to undergo qualification testing must first successfully complete all applicable acceptance tests.
[2] These tests shall be performed before the first and after the last non-operating environment test and before the first and after the last operating environment test.
[3] These tests shall be performed during shock and vibration testing.
[4] These tests shall be performed during operating thermal cycle and thermal vacuum testing.
[5] The same three sample components shall be subjected to each test designated with an X. For tests designated with a quantity of less than three, each sample component tested shall be selected from the original three sample components.

(b) *Status of health.* A command receiver decoder shall be subjected to status-of-health tests performed in accordance with E417.3(g). These tests must include measurements of pin-to-pin resistances, pin-to-case resistances and input current.

(c) *Functional performance.* Functional performance tests shall be conducted to demonstrate compliance with the electronic components general design and performance requirements provided in appendix D, D417.13 applicable to a command receiver decoder in accordance with the following:

(1) Functional testing must demonstrate that a command receiver decoder's response time, from receipt of destruct sequence to initiation of destruct output, is in accordance with its performance specification.

(2) Functional testing must demonstrate a command receiver decoder's ability to output arm and destruct commands that deliver the specified power to each specified load at the specified minimum, maximum, and transient input power voltages in accordance with the command receiver decoder's performance specification.

(3) Testing must demonstrate that the maximum leakage current through the command destruct output port is at a level that can not degrade performance of down-string ordnance initiation systems or result in an unsafe condition.

(d) *Circuit protection.* The following tests shall be conducted to demonstrate that a receiver decoder's circuit protection provides for the component to satisfy its performance specifications when subjected to improper launch processing, abnormal flight conditions, and any non-flight termination system vehicle component failure:

(1) Testing must demonstrate that any circuit protection allows a command receiver decoder to function without violating performance specifications when subjected to the maximum input voltage of the open circuit voltage of the command receiver decoder's power source and when subjected to the minimum input voltage of the loaded voltage of the power source.

(2) Testing must demonstrate that, in the event of an input power dropout, any control or switching circuit that contributes to the reliable operation of a command receiver decoder, including solid-state power transfer switches, does not change state for at least 50 milliseconds.

(3) Testing must demonstrate that any watchdog circuit functions according to its design specification.

(4) Testing must demonstrate that a command receiver decoder's performance does not degrade when any of its monitoring circuits or non-destruct output ports are subjected to a short circuit or the highest positive or negative voltage capable of being supplied by the monitor batteries or other power supplies.

(5) Testing must demonstrate that a command receiver decoder functions without violating performance specifications when subjected to a reverse polarity voltage that could occur during launch processing.

(e) *Radio frequency processing.* A command receiver decoder shall be tested to demonstrate that its radio frequency processing satisfies its performance specifications in a flight configured radio frequency environment, where the environment includes locally induced radio frequency noise sources and the maximum predicted noise-floor, ground transmitter performance variations, and abnormal launch vehicle flight. Tests shall be conducted to demonstrate compliance with the design requirements contained in appendix D, D417.15(c) in accordance with the following:

(1) Testing must demonstrate that a command receiver decoder satisfies all its performance specifications at twice the

minimum and maximum tolerances associated with the command control system transmitting equipment frequency modulation variations. This test shall be performed using the minimum and maximum number of tones that could be simultaneously transmitted including any pilot tone or check channel.

(2) Testing must demonstrate that a command receiver decoder satisfies all its performance specifications at twice the worst-case command control system transmitter radio frequency shift, Doppler shifts of the carrier center frequency, and shifts in flight hardware center frequency during flight. This test must be performed at the command receiver's sensitivity guaranteed by its performance specifications.

(3) Testing must demonstrate that a command receiver decoder satisfies all its performance specifications when exposed to the maximum radio frequency energy that the command control system transmitter is capable of imposing plus a 3 dB margin without change or degradation in performance after such exposure.

(4) Testing must demonstrate that the command receiver cannot be captured by another transmitter. Testing must show that the application of any unmodulated radio frequency at a power level of up to 80% of the command control system transmitter's modulated carrier signal does not capture the receiver or interfere with a signal from the command control system.

(5) Testing must demonstrate that a command receiver decoder's radio frequency input power will be monitored accurately during flight. Testing must show that the output signal strength monitor is directly related and proportional to the radio frequency input signal.

(6) Testing must demonstrate that a command receiver decoder does not produce an inadvertent output when subjected to a radio frequency input short-circuit, open-circuit, or changes in input voltage standing wave ratio.

(7) Testing must demonstrate that the command receiver guaranteed input sensitivity is no less than 6dB higher than the maximum predicted noise-floor.

(f) *Decoder logic.* A command receiver decoder shall be tested to demonstrate its ability to reliably decode an uplink command when subjected to operating conditions that can occur during abnormal vehicle flight and ground system performance variations. Tests shall be conducted to demonstrate compliance with the design and performance requirements contained in appendix D, D417.15(d) in accordance with the following:

(1) Testing must demonstrate that a command receiver decoder reliably processes a commanded signal at twice the minimum and maximum tolerances associated with the command control system transmitting equipment. At a minimum, tone balance, tone frequency, audio tone distortion, FM deviation per tone, and command transmitter variations in command logic sequence timing shall be tested.

(2) Testing must demonstrate that the bandwidth of a command receiver decoder's tone filter provides for accurate recognition of the command signal tones. The testing must demonstrate that the receiver decoder distinguishes between tones that are capable of inhibiting a command output or inadvertently issuing an output.

(3) Testing must demonstrate that a command receiver decoder requires two commanded steps to issue a destruct command. Testing must show that the receiver processes an arm command as a prerequisite for the destruct command. Testing must demonstrate that a command receiver is capable of simultaneously outputting arm, destruct, and check channel signals.

(4) Testing must demonstrate the decoding and output of a tone, such as a pilot tone or check tone, is representative of link and command closure. The presence or absence of the tone signal must have no effect on a command receiver decoder's command processing and output capability.

(g) *Input current monitor.* Testing shall be performed to obtain an indication of status-of-health of the unit under test during environmental stress conditions. Variations in input current are indicators of internal component damage. The command receiver decoder power input current shall be continuously monitored to detect variations in amplitude. There must be no fluctuations in nominal current draw when the command receiver decoder is in the steady state.

(h) *Output functions.* Testing shall be performed to verify critical performance parameters during environmental stress conditions. Arm and destruct commands shall be sent at the guaranteed radio frequency input power level. All command outputs shall be continuously monitored to detect variations in amplitude.

(i) *Radio frequency monitor.* The radio frequency level monitor, also known as radio frequency signal strength, signal strength telemetry output, or automatic gain control shall be continuously monitored. Any unexpected fluctuations or drop out would constitute a test failure. The radio frequency level monitor shall be used as a status-of-health indication to determine the receiver's radio frequency processing functionality. The radio frequency level used for this testing shall be at the manufacturer's guaranteed radio frequency level.

(j) *Thermal performance testing.* A command receiver decoder shall be tested to demonstrate that it satisfies its performance specifications when subjected to operating and workmanship thermal environments. The following tests shall be performed using the receiver decoder's low and high operating voltage while the receiver decoder is at the high and low temperatures during the first, middle, and last thermal cycles. The following tests shall also be performed during thermal vacuum testing using the receiver decoder's low and high operating voltage while the receiver decoder is at the high and low temperatures for all thermal cycles.

(1) Arm and destruct commands shall be sent, with a pilot tone, at the lowest radio frequency input power level required for reliable receiver decoder operation according to its performance specifications. All command outputs shall be continuously monitored. Any variations in amplitude that violate the performance specifications and any inadvertent output constitute a test failure.

(2) The command receiver decoder's power input current shall be continuously monitored to detect variations in amplitude. There must be no fluctuations in nominal current draw when the command receiver decoder is in the steady state.

(3) The radio frequency level monitor shall be continuously monitored in accordance with paragraph (i) of this section.

(4) Testing shall be performed at a radio frequency bandwidth greater than twice the total combined maximum tolerances of all applicable radio frequency performance factors. The performance factors include frequency modulation deviation of multiple tones, command control transmitter inaccuracies within its performance specifications, and variations in flight hardware performance during thermal and dynamic environments.

(5) Arm and destruct commands with a pilot tone shall be tested at the threshold sensitivity at the maximum and minimum tone modulation and center frequency.

E417.21 Batteries

(a) *General.* A battery used as part of a flight termination system shall be tested to demonstrate that it functions according to its performance specification when subjected to non-operating and operating environments. This testing shall be accomplished in accordance with the acceptance, qualification, and age surveillance test matrices and accompanying requirements of this section. The requirements in this section apply to silver zinc and nickel cadmium batteries. A launch operator shall clearly and convincingly demonstrate equivalent test requirements for any other type of battery through the licensing process.

TABLE E417.21–1

Manually activated silver zinc battery acceptance tests [1]	Reference E417.13(a)	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimensions	E417.5(c)	100
Identification	E417.5(e)	100

TABLE E417.21–1—Continued

Manually activated silver zinc battery acceptance tests [1]	Reference E417.13(a)	Quantity (percent)
Battery Mounting and Case Integrity [2]	E417.21(w)	100
Safety Tests	E417.21(c)	100
Electrolyte	E417.21(d)	100
Performance Verification	E417.3(e)	
Status-of-health	E417.21(e)	100
Monitoring Capability	E417.21(h)	100
Heater Circuit Verification	E417.21(f)	100
Activation	E417.21(g)	100
Status-of-health	E417.21(e)	100
Electrical Performance	E417.21(i)	100
Cell Acceptance Verification	E417.21(j)	1 cell per flight battery

[1] These battery acceptance tests shall be performed at the launch site just prior to installation.
[2] This test applies to battery cases that contain welds.

TABLE E417.21–2

Manually activated silver zinc battery qualification tests	Reference E417.7	Quantity [4]	
		Batteries X=3	Cells X=12
Component Examination	E417.5		
Visual Inspection	E417.5(b)	X	X
Dimensions	E417.5(c)	X	X
Identification	E417.5(e)	X	X
Battery mounting and Case Integrity [1]	E417.21(x)	X	....
Safety Tests	E417.21(c)	X	X
Electrolyte	E417.21(d)	X	X
Performance Verification	E417.3(e)		
Status-of-health	E417.21(e)	X	X
Monitoring Capability	E417.21(h)	X	X
Heater Circuit Verification	E417.21(f)	X	....
Non-Operating Environment Tests	E417.9		
Storage Temperature	E417.9(b)	X	X
Transportation Shock	E417.9(d)	X	X
Bench Handling Shock	E417.9(e)	X	X
Transportation Vibration	E417.9(f)	X	X
Fungus Resistance	E417.9(g)	X	....
Salt Fog	E417.9(h)	X	....
Fine Sand	E417.9(i)	X	....
Performance Verification	E417.3(e)		
Status-of-health	E417.21(e)	X	X
Monitoring Capability	E417.21(h)	X	X
Heater Circuit Verification	E417.21(f)	X	....
Activation	E417.21(g)	X	X
Status-of-health	E417.21(e)	X	X
Electrical Performance [2]	E417.21(i)	X	X
Operating Environment Tests	E417.11		
Activated Stand Time	E417.21(m)	X	X
Overcharge	E417.21(n)	X	....
Humidity [2]	E417.11(g)	X	....
Acoustic [3]	E417.11(d)	X	X
Shock [3]	E417.11(e)	X	X
Acceleration [3]	E417.11(f)	X	X
Sinusoidal Vibration [3]	E417.11(b)	X	X
Random Vibration [3]	E417.11(c)	X	X
Thermal Cycle [2]	E417.21(k)	X	X
Electromagnetic Interference and Compatibility	E417.11(j)	1	....
Explosive Atmosphere	E417.11(k)	1	....
Performance Verification	E417.3(e)		
Status-of-health	E417.21(e)	X	X
Monitoring Capability	E417.21(h)	X	X
Heater Circuit Verification	E417.21(f)	X	....
Discharge and Pulse Capacity	E417.21(o)	X	X
Leakage	E417.21(l)	X	X
Disassembly	E417.21(w)	X	X

[1] This test applies to battery cases that utilize welds.
[2] Electrical performance tests, E417.21(i), shall be performed under ambient conditions before the first operating environment test and while the batterey is subjected to each operating environment test.

[3] The battery shall be continuously monitored to verify that the required voltage regulation is maintained while supplying the required operating steady-state current. Monitoring for these tests shall be performed at a 0.1 ms resolution with no dropouts.
[4] The same three sample batteries and 12 sample cells shall be subjected to each test designated with an X. For tests designated with a quantity of less than three, the batteries tested shall be selected from the original batteries.

TABLE E417.21–3

Silver zinc battery storage life extension tests	Reference E417.15	Quantity X=2 cells per year [2]
Component Examination	E417.5	
Visual Inspection	E417.5(b)	X
Dimensions	E417.5(c)	X
Identification	E417.5(e)	X
Safety Tests	E417.21(c)	X
Electrolyte	E417.21(d)	X
Performance Verification	E417.3(e)	
Status-of-Health	E417.21(e)	X
Activation	E417.21(g)	X
Status-of-Health	E417.21(e)	X
Electrical Performance [1]	E417.21(i)	X
Operating Environment Tests	E417.11	
Activated Stand Time	E417.21(m)	X
Thermal Cycling [1]	E417.21(k)	X
Discharge Design Capacity	E417.21(o)	X
Leakage	E417.21(l)	X
Disassembly	E417.21(w)	X

[1] Electrical performance tests, § E417.21(i), shall be performed under ambient conditions before the first operating environment test and while the battery is subjected to each operating environment test.
[2] Two silver zinc cells from the production lot used for qualification testing shall be tested each year of the manufacturer's specified storage life to determine that they still satisfy their performance specifications.

TABLE E417.21–4

Nickel cadmium cell lot acceptance and qualification tests [1]	Reference	Quantity
Cell Screening: [2]		
Cell Inspection and Preparation	E417.21(q)	100%
Cell Conditioning and Characterization Tests	E417.21(s)	100%
Status-of-health	E417.21(b)	
Charge Retention	E417.21(b)(1)	100%
0 °C capacity and overcharge determination	E417.21(b)(2)	100%
Cell Qualification Tests: [3]		X=70 [5]
Thermal Cycling	E417.21(u)	X
X-ray Inspection [4]	E417.5(f)	5
Vent Pressure	E417.21(c)(2)	5
Cycle Life Testing	E417.21(y)	30
Charge Retention	E417.21(b)(1)	X
Calendar Life Testing	E417.21(t)	5 cells per year of storage

[1] All nickel cadmium cells used in a qualification or flight battery must be from a production lot that has successfully passed the lot acceptance and qualification tests required by this test matrix. These tests shall be performed to ensure the cells are consistent and will provide the required performance and to detect any manufacturer variation introduced into the lot of cells since the original database was formed. All the results of the tests executed on multiple lots shall be entered into an engineering database to establish ''family characteristics'' that meet the performance requirements. These tests shall be performed for each cell production lot. Cells used in these cell qualification tests shall not be used in the construction of qualification or flight batteries.
[2] Any cell that fails to meet a screening test shall be rejected and not used. This rejection does not invalidate the lot.
[3] The failure of any cell to pass a cell qualification test will invalidate the lot.
[4] X-ray inspection is only required for cells with multiple internal tabs. X-ray shall demonstrate tab integrity at 0° and 90°.
[5] The same 70 cells from the same production lot as the flight cells shall be subjected to each cell qualification test designated with an X. For tests designated with a quantity of less than 70, the cells shall be selected from the original 70 sample cells.

TABLE E417.21–5

Nickel cadmium battery acceptance tests	Reference E417.13(a)	Quantity
Cell Lot Acceptance and Qualification Tests [1]	Table E417.21–4	100% of Cells
Component Examination(Complete Battery)	E417.5	
Inspection	E417.5(b)	100%
Weight	E417.5(d)	100%
Dimensions	E417.5(c)	100%
Identification	E417.5(e)	100%
Safety Tests	E417.21(c)	
Safety Devices Repeatable Function	E417.21(c)(1)	100%

TABLE E417.21–5—Continued

Nickel cadmium battery acceptance tests	Reference E417.13(a)	Quantity
Safety Devices One Time Operation	E417.21(c)(2)	Lot Sample
Proof Pressure Leak Test	E417.21(c)(3)	100%
Monitoring Capability	E417.21(h)	100%
Heater Circuit Verification	E417.21(f)	100%
Discharge and pulse capacity	E417.21(o)	100%
Operating Environment Tests	E417.11	
Thermal Cycling	E417.21(u)	100%
Random Vibration	E417.13(b)	100%
Status-of-health	E417.21(b)	
Charge Retention	E417.21(b)(1)	100%
Discharge and Pulse Design Capacity	E417.21(o)	100%
Leakage (2)	E417.5(h)	100%
Status-of-health	E417.21(b)	
Charge Retention	E417.21(b)(1)	100%
Component Examination Inspection	E417.5(b)	100%
Post acceptance discharge and storage	E417.21(v)	100%

[1] All cells used in a qualification or flight battery must be from a production lot that has successfully passed the lot acceptance and qualification tests required Table E417.21–4.
[2] This test is required only for batteries that are sealed.

TABLE E417.21–6

Nickel cadmium battery qualification tests	Reference E417.7	Quantity X = 3 Batteries
Acceptance Tests [1]	Table E417.21–5	X
Non-Operating Environment Tests	E417.9	
Storage Temperature	E417.9(b)	X
Transportation Shock	E417.9(d)	X
Bench Shock	E417.9(e)	X
Transportation Vibration	E417.9(f)	X
Fungus Resistance	E417.9(g)	X
Salt Fog	E417.9(h)	X
Discharge and Pulse Capacity	E417.21(o)	X
Status-of-health	E417.21(b)	
Charge Retention	E417.21(b)(1)	X
Operating Environment Tests	E417.11	
Sinusoidal Vibration [2]	E417.11(b)	X
Acoustic [2]	E417.11(d)	X
Shock [2]	E417.11(e)	X
Acceleration [2]	E417.11(f)	X
Humidity [3]	E417.11(g)	X
Thermal Cycling	E417.21(k)	X
Random Vibration [2]	E417.11(c)	X
Proof Pressure Leak Test	E417.21(c)(3)	X
Electromagnetic Interference and Compatibility	E417.11(j)	1
Status-of-health	E417.21(b)	
Charge Retention	E417.21(b)(1)	X
Operating Charge Retention	E417.21(p)	X
Cycle Life	E417.21(y)	X
Leakage [4]	E417.21(l)	X
Disassembly	E417.21(w)	X
X-ray Inspection [5]	E417.5(f)	5 cells
Explosive Atmosphere	E417.11(k)	1

[1] A qualification battery shall first be subjected to acceptance testing except for any acceptance testing that is destructive, such as testing of burst disks.
[2] The battery shall be continuously monitored to verify that the required voltage regulation is maintained while supplying the required operating steady-state current. Monitoring for these tests shall be performed at a 0.1-millsecond resolution with no dropouts.
[3] A charge retention test shall be performed throughout this test in accordance with E417.21(p). The results of this test shall be compared with previous data to ensure that humidity environments do not degrade battery capacity.
[4] This test is only required for sealed batteries.
[5] X-ray inspection is only required for cells with multiple internal tabs. X-ray shall demonstrate tab integrity at 0° and 90°.

(b) *Nickel cadmium battery and cell status of health.* A flight termination system battery or cell shall be subjected to status-of-health tests performed in accordance with § E417.3(g), as required by the test matrices in this section and the following:

(1) *Charge retention.* The launch operator shall perform testing to determine the capability of a battery or cell to consistently retain its charge and provide the required capacity margin from the final charge used for the end-to-end destruct test to the end of flight safety responsibility. A 72-hour storage test of the battery or cell at room temperature

shall be performed in accordance with the following to acquire a data point for comparison to be used as a status of health indication of the battery or cell:

(i) The battery or cell shall be charged in accordance with paragraph (r) of this section and stored at room temperature for 72 hours.

(ii) Each cell performance must be greater than 90% of the 0.90-volt capacity determined in accordance with paragraph (s)(2) of this section.

(iii) Battery performance must be in accordance with the cell capacity determined in accordance with paragraph (s)(2) of this section multiplied times the number of cells in the battery.

(iv) Status of health data for each battery and cell tested shall be maintained to establish family performance data. Any cell or battery whose performance is out-of-family shall not be used for flight.

(2) *0°C capacity and overcharge determination.* Testing shall be performed in accordance with the following to ensure cell case pressure integrity, validate cell chemistry status-of-health at a high charge efficiency temperature, and allow cell matching for capacity:

(i) A capacity discharge test in accordance with paragraph (r) of this section shall be performed on each cell at 0°C ±2°C.

(ii) Repeat charge and discharge cycles until the capacities for two cycles agree to 1% for the cell. Cells shall be inspected for cracks.

(iii) The end of charge shall be less than 1.55 volts at 0°C ±2°C to prevent an explosive hazard due to H_2 generation.

(c) *Safety tests.* Each battery and cell shall be tested to ensure it will not create a loss of structural integrity or create a hazardous condition when subjected to normal and abnormal operating conditions in accordance with the following:

(1) All safety devices that function repeatedly without degradation, such as vent valves, shall be tested to demonstrate that they meet the manufacturer's design specification.

(2) Safety devices that do not function repeatedly without degradation, such as burst discs, shall be lot acceptance tested using a 10% lot sample but not less than five samples to demonstrate compliance with the manufacturer's design specification. Vents must open within ±10% of the design specification average vent pressure with a maximum vent pressure no higher than 350 pounds per square inch. All five cells must pass or the lot shall be rejected.

(3) The battery case shall be leak tested at 1.5 times the greatest operating differential pressure that could occur during qualification, preflight and flight conditions.

(d) *Electrolyte.* Each lot of electrolyte used for battery activation shall be tested to ensure compliance with the manufacturer's specification.

(e) *Silver zinc battery status-of-health.* A flight termination system battery shall be subjected to status-of-health tests performed in accordance with E417.3(g). These tests shall be performed as required by the test matrices and must include the following:

(1) *Pre-activation.* Insulation resistance shall be measured between mutually insulated pin-to-pin and pin-to-case points using a minimum 500-volt workmanship voltage. Continuity resistance shall be measured between mutually insulated pin-to-pin and pin-to-case points. The insulation resistance and continuity resistance measurements must be in accordance with the manufacturer's design specifications.

(2) *Post activation.* Leakage current shall be measured from each pin to case to verify no current leakage paths exist as a result of electrolyte leakage. This measurement must have a resolution that detects any leakage current of 0.1 milliamps or greater.

(f) *Heater circuit verification.* All heater and control circuitry shall be tested to verify that it performs in accordance with the manufacturer's design specification.

(g) *Activation.* A battery shall be activated following an activation procedure that includes the manufacturer's activation steps. The identical battery activation procedure shall be used for qualification, storage extension life, and acceptance testing.

(h) *Monitoring capability.* The ability to monitor voltage, current, or temperature shall be tested to ensure any and all monitoring devices perform in accordance with their performance specifications.

(i) *Electrical performance.* Electrical performance tests shall be performed before during and after a battery or cell is subjected to operating environments to ensure the battery will function within its performance specification during flight. Electrical performance parameters critical to battery or cell operation shall be monitored while performing the following to verify a battery or cell is performing according to the manufacturer's design specifications and within-family:

(1) A no-load voltage test of the battery or cell shall be performed as identified by the matrices in this section with the activated battery. For a silver-zinc battery or cell, this test shall be performed after the battery is activated and after the manufacturer's specified soak period. This test must demonstrate that voltage measurements are in accordance with the manufacturer's design specification.

(2) A load profile test of each battery or cell shall be performed. The test must consist of, without interruption, a steady-state load test at the flight power current level for one minute.

(3) An acceptance test pulse load test shall be performed at the operating arm and destruct pulse current level at twice the pulse duration or a minimum workmanship screening level of 100 milliseconds.

(4) A qualification test pulse load test must be performed at the operating arm and destruct pulse current level at twice the pulse duration or a minimum workmanship screening level of 200 milliseconds.

(5) The battery or cell must supply the required current while maintaining the required voltage regulation in accordance with the manufacturer's design specification.

Monitoring during the current pulse test must have a resolution of 0.1 milliseconds.

(j) *Cell acceptance verification.* All cell acceptance tests shall be performed on one non-flight battery cell that is from the same production lot as the flight battery, with the same lot date code as the cells in the flight battery. This cell must be attached to the battery from the time of the manufacturer's acceptance test and subjected to the same non-operating environments as the battery. The following tests shall be performed on this cell immediately before activation of the battery to verify that the flight battery cells were manufactured the same as the qualification battery cells and that no degradation in performance has occurred:

(1) The test cell shall be discharged at a moderate rate, in accordance with the manufacturer's design specification, and two load profile tests shall be performed as described in paragraph (i)(2) of this section, until the minimum design specification voltage is achieved. The resultant cell amp-hour capacity must demonstrate that the minimum capacity specification is achieved.

(2) For a rechargeable battery, the cell shall be tested in the same manner as required by paragraph (j)(1) of this section but repeated for the number of charge and discharge cycles used during qualification testing. The testing must demonstrate that the cell capacity and electrical characteristics are in accordance with the manufacturer's design specification for each charge and discharge cycle.

(k) *Qualification thermal cycle.* Qualification thermal cycle testing shall be performed to ensure that preflight environments, acceptance testing environments, and flight environments do not adversely affect battery performance. A battery shall be tested in accordance with E417.11(h) of this appendix and in accordance with the following:

(1) *Silver zinc batteries.* A silver zinc battery shall be tested in accordance with § E417.11(h)(3) and the following:

(i) Electrical performance tests shall be conducted in accordance with paragraph (i) of this section, during the first, fourth, fifth, and eighth thermal cycles.

(ii) A silver zinc battery shall be continuously monitored during testing to verify that the required open circuit voltage is maintained for all thermal cycle dwells and thermal transitions.

(2) *Nickel cadmium batteries.* A nickel cadmium battery shall be tested in accordance with E417.11(h)(2) and the following:

(i) The battery must be charged in accordance with paragraph (r) of this section. A battery must not be recharged at anytime during thermal cycle testing.

(ii) Each electrical performance test shall be conducted in accordance with paragraph (i) of this section, during the first, middle and last thermal cycles at ambient, hot and cold qualification temperatures.

(iii) The battery shall be continuously monitored to verify that the required open circuit voltage is maintained throughout testing. This test must be performed at all thermal cycle dwells and thermal transitions.

(iv) The qualification high temperature shall be a minimum workmanship level of 40°C or the maximum predicted environment high temperature plus 10°C, whichever is higher. The qualification low temperature shall be a minimum workmanship level of −20°C or the predicted environment low temperature minus 10°C, whichever is lower.

(v) The battery's remaining capacity shall be determined at the end of thermal cycle testing to demonstrate that temperature does not adversely affect capacity and that the battery capacity will support an in-flight battery capacity margin of no less than 50 percent. Capacity and performance determination shall be demonstrated by performing a discharge and pulse test in accordance with paragraph (o) of this section. The self-discharge stand-time used for this test shall be the time that the battery must support launch processing, including any launch delays.

(l) *Leakage.* A battery's cells shall be tested to verify their seal integrity when in the battery configuration and individually as required by the test matrices of this section and in accordance with the following:

(1) Fully charged cells shall be exposed to a vacuum of less than 10^{-2} torr and then charged at a C/20 rate for 20 hours.

(2) The cells shall be individually weighed and tested with a chemical indicator to identify any cells that may have leaked. A weight loss greater than three-sigma from the average weight loss constitutes a test failure. Any cell that fails this first test shall be cleaned and discharged in accordance with paragraph (r) of this section. The cell shall then be recharged in accordance with paragraph (r) and re-tested using a chemical indicator. If the chemical indicator shows a leak after the second test, the cell shall not be used for flight.

(3) The temperature of the cells shall be controlled to prevent cell damage and must not exceed the maximum predicted thermal environment.

(m) *Activated stand time.* A silver zinc battery or cell shall be tested to demonstrate that it satisfies its performance specifications after being activated and subjected to an environment that simulates preflight battery conditioning environments, including the launch vehicle installation environment. The time period that the activated battery is subjected to the preflight environments is its activated stand time. Open-circuit voltage testing shall be performed at the beginning and end of the activated stand time to determine the health of the battery or cell. A load test shall be performed at the end of the activated stand time to verify whether the battery or cell is in a peroxide or monoxide chemical state in accordance with its performance specifications prior to proceeding with operating environmental tests.

(n) *Overcharge.* A battery or cell shall be tested to demonstrate that it is capable of being overcharged without degrading performance beyond its performance specifications. An overcharge shall be applied to the battery or cell using a nominal-charging rate up to the manufacture's specified overcharge limit.

(o) *Discharge and pulse capacity.* A battery or cell shall be tested to ensure that it satisfies all electrical performance specifications at the end of its specification capacity limit in accordance with the following:

(1) *Silver zinc batteries and cells.* A silver zinc battery or cell shall be tested to ensure it meets its electrical performance specification at its capacity limit. The capacity consumed in all previous tests must be calculated and used as input for the following tests:

(i) A battery shall be discharged at flight loads until the capacity has reached the manufacturer's specified capacity value. The total amount of capacity consumed during the discharge test and qualification discharge shall be calculated and verified that it meets the minimum performance specification. A high current pulse of 150% of the expected current pulse shall then be applied to the flight loads. The pulse duration for this test shall be twice the expected operating flight pulse time or a minimum workmanship level of 100 milliseconds whichever is greater.

(ii) The minimum voltage shall be no less than the flight termination system component acceptance test voltage or the manufacturer's specified voltage value, whichever is greater. The total amount of capacity consumed during the discharge test shall be calculated and verified that it meets the minimum performance specification.

(iii) The battery or cell shall then be completely discharged in accordance with paragraph (r) of this section to determine the remaining capacity as a status-of-health indicator.

(2) *Nickel cadmium batteries and cells.* A nickel cadmium battery or cell shall be subjected to the following:

(i) The battery or cell shall be fully charged in accordance with paragraph (r) of this section.

(ii) The battery or cell shall then be discharged at flight loads. When the battery or cell is discharged to 150% of its rated amp/hour capacity, a high current pulse of 150% of the expected operating current pulse shall be applied to the flight loads. The high current pulse shall be applied to the flight loads again when the battery or cell reaches 75% of its rated capacity, and again when the battery or cell reaches the end of its capacity. The duration of the high current pulse shall be twice the expected operating flight pulse time or a minimum workmanship level of 100 milliseconds for acceptance testing and 200 milliseconds for qualification testing, whichever is greater.

(iii) The minimum voltage shall be no less than the flight termination system component acceptance test voltage or the manufacturer's specified value, whichever is greater. The total amount of capacity consumed during the discharge test shall be calculated and verified to meet the minimum design specification.

(iv) The battery cell shall then be completely discharged in accordance with paragraph (r) of this section to determine the remaining capacity as a status-of-health indicator.

(p) *Operating charge retention testing.* A battery shall be tested to ensure that it maintains the required energy margin when subjected to the operating stand time between the final charge used for the end-to-end test prior to flight and the no longer endanger time determined in accordance with § 417.221(c). The operating stand time must include any launch processing and launch delay contingencies. Testing shall be performed in accordance with the following:

(i) The battery shall be charged in accordance with paragraph (r) of this section and allowed to stand in an open-circuit configuration.

(ii) After the operating stand time has elapsed, the battery shall be discharged in accordance with paragraph (r) of this section and the capacity loss shall be calculated. This capacity lost due to discharge in an open-circuit configuration shall be accounted for in the battery analysis performed in accordance with § 417.329(k) to demonstrate the required battery capacity margin.

(q) *Nickel cadmium cell inspection and preparation.* Each nickel cadmium cell shall be inspected to ensure it is free of manufacturing defects. The launch operator shall ensure inspection and preparation are in accordance with the following:

(1) The manufacturer's lot-code shall be recorded and the cell shall be verified to be clean with no cracks or leaks.

(2) Each cell shall be completely discharged at a rate that will not result in damage to the cell.

(3) The integrity of each tab to cell weld will be established by a pull test to ensure sufficient strength to meet its performance specification.

(4) Weight measurements shall be taken to support leak testing for subsequent tests. Each cell must be weighed to ±0.001 grams.

(r) *Nickel cadmium cell and battery capacity charge and discharge.* A nickel cadmium cell or battery shall be charged and discharged at a rate that prevents damage and provides for the cell or battery's electrical characteristics to remain consistent. Unless otherwise specified, the charge and discharge rates used for testing shall be identical to that used for operating flight battery conditioning. The following cell charge and discharge requirements shall be applied to a battery by multiplying the required voltages by the number of cells in the battery:

(1) Each cell shall be discharged to 0.9 volt, then discharged at a slower rate to 0.10 volt and finally completely discharged. The discharge rate between 0.9 volt and 0.1 volt shall not exceed C/10.

(2) The rate of discharge shall allow a sufficient resolution to determine out-of-family data.

(3) Each cell shall be charged at no greater than the C/10 rate to 160% of rated capacity.

(s) *Nickel cadmium cell conditioning and characterization tests.* Each cell or battery shall be subjected to the following characterization and conditioning tests to ensure proper electrical performance:

(1) *Initial charging and cycling.* Each cell shall be initially conditioned to ensure repeatable electrical performance throughout its service life. A launch operator shall perform the following:

(i) Prior to any testing, each nickel cadmium cell shall be aged for no less than 11 months after the manufacturer's lot date code to ensure consistent electrical performance of the cell for its entire service life.

(ii) The first charge shall be performed at no greater than a C/20-rate to initialize the chemistry within the cell. Batteries stored for over one month after the first charge must be recharged at the same rate.

(2) *Formation of plates and determination of cell capacities.* Testing shall be performed to stabilize the cell chemistry and determine cell capacity. Discharge tests shall be performed in accordance with paragraph (r) of this section at room temperature and repeated until the capacities for two cycles agree to within 1%.

(3) *Cell impedance pulse voltage determination.* Each electrical performance test shall be performed for each cell to acquire data for cell matching. Each cell shall be charged in accordance with paragraph (r) of this section and cold soaked to the lowest predicted temperature environment. The cell shall then be subjected electrical tests in accordance with paragraph (i) of this section. Repeat this procedure three times to establish adequate data for cell matching.

(t) *Calendar life testing.* Testing shall be performed to validate that any cell aging effects will not adversely affect flight battery performance. Each year, five cells for the same lot as the flight batteries that have been stored with flight batteries shall be tested in accordance with the following:

(1) Five cells shall undergo testing in accordance with paragraphs (s)(1), (s)(2), (b)(1) and (b)(2) of this section.

(2) Cycle life testing shall be performed in accordance with paragraph (y) of this section.

(3) A final leak test shall be performed in accordance with paragraph (l) of this section.

(u) *Nickel cadmium acceptance thermal cycle test.* Acceptance thermal cycle testing shall be performed to ensure proper workmanship and to validate that flight environments do not adversely affect battery or cell performance. Testing shall be performed in accordance with E417.13(d)(2) and in accordance with the following:

(1) The battery or cell must be charged in accordance with paragraph (r) of this section.

(2) Electrical performance tests shall be conducted in accordance with paragraph (i) of this section during the first and last hot, ambient, and cold maximum predicted thermal environments.

(3) The thermal cycle acceptance high temperature must be a 30 °C minimum workmanship screening level or the maximum predicted environment high temperature, whichever is higher. The acceptance low temperature must be −10 °C workmanship screening temperature or the predicted environment low temperature, whichever is lower.

(4) Critical parameters shall be monitored during thermal extremes on all cycles and during thermal transition. The battery or cell shall be continuously monitored to verify that the required open circuit voltage is maintained throughout testing.

(5) The remaining capacity must be determined at the end of thermal cycle testing to demonstrate that temperature will not adversely affect open circuit discharge and capacity of the battery or cell. Capacity and performance shall be determined by performing a discharge and pulse test in accordance with paragraph (o) of this section. The total capacity consumed due to open circuit discharge shall be used as a status-of-health indicator of the cell or battery.

(v) *Post acceptance discharge and storage.* A battery shall be stored and transported in a configuration that prevents electrical performance damage and allows accurate representation of calendar life cell samples. The battery shall be discharged and stored in accordance with the following:

(1) The battery shall be discharged in accordance with paragraph (r) of this section.

(2) The battery shall be discharged to prevent cell reversal to a maximum of 0.05 volts per cell.

(3) After the discharge, the battery shall be stored in an open circuit configuration consistent with the calendar life test samples described in paragraph (t) of this section.

(w) *Battery and cell disassembly.* A battery and all cells within the battery shall be inspected for excessive wear and damage after exposure to qualification test environments. Battery and cell inspection must be performed in accordance with E417.5(g) and the following:

(1) The inspection shall include full battery inspection and verification that there was no movement of any component within the battery.

(2) The integrity of cell and wiring interconnects must be verified through inspection.

(3) The integrity of potting and shimming materials must be verified through inspection.

(4) Cells shall be removed and inspected for physical damage.

(5) Cells shall be individually tested with a chemical indicator to identify any cells that may have leaked. Any cell that shows signs of chemical leakage will be considered a test failure.

(6) One cell from each corner and the middle of the battery shall be removed and subjected to destructive physical analysis to validate plate tab to cell terminal, and plate and separator integrity.

(x) *Battery mounting and case integrity.* Battery cases and mounting hardware shall be tested to demonstrate the capability to withstand normal and abnormal flight environments. Inspection or test criteria shall be implemented to ensure welds are free of workmanship defects. Welds must be inspected by X-ray in accordance with E417.5(f).

(y) *Battery cycle life testing.* For a rechargeable battery, such as a nickel cadmium battery, testing shall be performed to validate that there is adequate margin between the number of operating charge and discharge cycles and the design limit of all the cells and battery. Tests shall be performed to demonstrate at least five times the number of cycles expected of a flight battery throughout its life, including acceptance testing, preflight checkout phases, and flight in accordance with the following criteria:

(1) The battery must be charged and discharged in accordance with paragraph (r) of this section for at least five times the number of cycles expected of the flight battery throughout its life.

(2) Discharge and pulse capacity testing in accordance with paragraph (o) of this section shall be performed on the first 10 charge and discharge cycles, every fifth cycle thereafter, and the last five cycles.

(3) If any cell fails to meet the discharge and pulse capacity testing required by paragraph (o) of this section the lot shall be rejected.

E417.23 Miscellaneous Components

Any flight termination system component not specifically identified in this appendix shall be tested to demonstrate that it accomplishes its intended function after being subjected to the non-operating, operating, and workmanship screening environments in accordance with the test matrices of this section. The FAA will identify and impose any test requirements necessary for safety for new or unique components through the licensing process and in accordance with § 415.11 of this chapter.

TABLE E417.23–1

Miscellaneous component acceptance tests	Reference E417.13(a)	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Identification	E417.5(e)	100
Performance Verification [1]	E417.3(e)	100
Abbreviated Performance Verification [2]	E417.3(f)	100
Operating Environment Tests	E417.13	
Thermal Cycling	E417.13(d)	100
Thermal Vacuum	E417.13(e)	100
Acoustic	E417.13(c)	100
Random Vibration	E417.13(b)	100

TABLE E417.23–1—Continued

Miscellaneous component acceptance tests	Reference E417.13(a)	Quantity (percent)
Leakage	E417.5(h)	100

[1] These tests shall be performed before the first and after the last operating environment test.
[2] This test shall be performed during each operating environment test.

TABLE E417.23–2

Miscellaneous component qualification tests	Reference E417.11	Quantity [4] X=3
Acceptance Tests [1]	Table E417.23–1	X
Performance Verification[2]	E417.3(e)	X
Non-Operating Environment Tests	E417.9	
Storage Temperature	E417.9(b)	X
Transportation Shock	E417.9(d)	X
Bench Handling Shock	E417.9(e)	X
Transportation Vibration	E417.9(f)	X
Fungus Resistance	E417.9(g)	1
Salt Fog	E417.9(h)	1
Fine Sand	E417.9(i)	1
Abbreviated Performance Verification [3]	E417.3(f)	X
Operating Environment Tests	E417.11	
Thermal Cycling	E417.11(h)	X
Humidity	E417.11(g)	X
Thermal Vacuum	E417.11(i)	X
Acceleration	E417.11(f)	X
Shock	E417.11(e)	X
Sinusoidal Vibration	E417.11(b)	X
Acoustic	E417.11(d)	X
Random Vibration	E417.11(c)	X
Electromagnetic Interference and Compatibility	E417.11(j)	1
Explosive Atmosphere	E417.11(k)	1
Leakage	E417.5(h)	X
Disassembly	E417.5(g)	X

[1] Each sample component to undergo qualification testing must first successfully complete all applicable acceptance tests.
[2] These tests shall be performed before the first and after the last non-operating environment test and before the first and after the last operating environment test.
[3] These tests shall be performed during each operating environment test.
[4] The same three sample components shall be subjected to each test designated with an X. For each test designated with a quantity of less than three, each component tested shall be selected from the original three sample components.

E417.25 Safe and Arm Devices and Electro Explosive Devices

(a) *General.* A safe and arm device that is part of a flight termination system and any accompanying electro explosive device shall be tested to demonstrate that it satisfies its performance specifications when subjected to non-operating and operating environments. This testing shall be accomplished in accordance with the acceptance, qualification, and age surveillance test matrices and accompanying requirements of this section.

TABLE E417.25–1

Safe and arm device acceptance tests	Reference E417.13(a)	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Identification	E417.5(e)	100
Performance Verification[1]	E417.3(e)	
Status-of-Health	E417.25(b)	100
Safety Tests	E417.25(e)	
Manual Safing	E417.25(e)(4)	100
Safing Interlock test	E417.25(e)(5)	100
Abbreviated Performance Verification[2]	E417.3(f)	
Dynamic Performance	E417.25(g)	100
Thermal Performance	E417.25(f)	100
Operating Environment Tests	E417.13	
Thermal Cycling	E417.13(d)	100
Random Vibration	E417.13(b)	100
X-ray	E417.5(f)	100
Leakage	E417.5(h)	100

[1] These tests shall be performed before the first and after the last operating environment test.

[2] These tests shall be performed during each operating environment test.

TABLE E417.25–2

Safe and arm device qualification tests	Reference E417.7	Quantity		
		X=1 [4]	X=6 [5]	X=2 [6]
Barrier Alignment	E417.25(o)			
Acceptance Tests[1]	Table E417.25–1	X	X	
Safety Tests	E417.25(e)			
Extended Stall	E417.25(e)(3)	X		
Abnormal Drop	E417.9(1)	X		
Containment	E417.25(e)(1)	....	....	X
Barrier Functionality	E417.25(e)(2)	....	....	X
Safing Verification	E417.25(e)(6)	....	X	
Non-Operating Environment Tests	E417.9			
Storage Temperature	E417.9(b)	....	X	
Transportation Shock	E417.9(d)	....	X	
Bench Handling shock	E417.9(e)	....	X	
Transportation Vibration	E417.9(f)	....	X	
Fungus Resistance	E417.9(g)	....	1	
Salt Fog	E417.9(h)	....	1	
Fine Sand	E417.9(i)	....	1	
Handling Drop	E417.9(k)	....	X	
Performance Verification[2]	E417.3(e)			
Status-of-Health	E417.25(b)	....	X	
Abbreviated Performance Verification[3]	E417.3(f)			
Dynamic Performance	E417.25(g)	....	X	
Thermal Performance	E417.25(f)	....	X	
Operating Environment Tests	E417.11			
Thermal Cycling	E417.11(h)	....	X	
Humidity	E417.11(g)	....	X	
Acceleration	E417.11(f)	....	X	
Shock	E417.11(e)	....	X	
Sinusoidal Vibration	E417.11(b)	....	X	
Acoustic	E417.11(d)	....	X	
Random Vibration	E417.11(c)	....	X	
Explosive Atmosphere	E417.11(k)	....	X	
Safe and Arm Transition	E417.25(c)	....	X	
Stall	E417.25(d)	....	X	
X-ray	E417.5(f)	....	X	
Leakage	E417.5(h)	....	X	
Disassembly	E417.5(g)	....	2	
Firing Test at Operating Current	E417.25(j)			
High Temperature	E417.25(j)(6)	....	2	
Low Temperature	E417.25(j)(7)	....	2	

[1] The sample safe and arm devices designated in the test matrix that are to undergo qualification testing must first successfully complete all applicable acceptance tests.
[2] Performance verification tests shall be performed before the first and after the last operating environment test.
[3] These tests shall be performed during each operating environment test.
[4] One safe and arm device shall be subjected to the extended stall and abnormal drop tests designated with an X.
[5] The same six sample safe and arm devices shall be subjected to each test designated with an X. For tests designated with a quantity of less than six, each safe and arm device tested shall be selected from the original six sample components.
[6] Two safe and arm devices shall be subjected to the containment and barrier functionality tests designated with an X. These tests are not required to be performed on flight safe and arm devices. The test samples must duplicate all dimensions of a flight safe and arm device, including gaps between explosive components, free-volume, and diaphragm thickness. The test samples must also have the explosive transfer assemblies installed.

TABLE E417.25–3

Electro-explosive device lot acceptance tests	Reference	Quantity
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Leakage	E417.5(h)	100
X-ray and N-ray	E417.5(f)	100
Performance Verification	E417.3(e)	
Static Discharge	E417.25(i)	100
Status-of-Health	E417.25(h)	100
Non-Operating Environment Tests and Operating Environment Tests	E417.9, E417.11	
Thermal Cycling[1]	E417.11(h)	Lot Sample[3]
High Temperature Storage[2]	E417.9(c)	Lot Sample
Shock[1]	E417.11(e)	Lot Sample

TABLE E417.25–3—Continued

Electro-explosive device lot acceptance tests	Reference	Quantity
Random Vibration [1]	E417.11(c)	Lot Sample
No Fire Verification	E417.25(p)	Lot Sample
Performance Verification	E417.3(e)	
Status-of-Health	E417.25(h)	Lot Sample
Component Examination	E415.5	
Visual Inspection	E417.5(b)	Lot Sample
Leakage	E417.5(h)	Lot Sample
X-ray and N-ray	E417.5(f)	Lot Sample
Firing Tests	E417.25(j)	
Ambient Temperature	E417.25(j)	
All-Fire Current	E417.25(j)(1)	⅙ Lot Sample
Operating Current	E417.25(j)(2)	⅙ Lot Sample
High Temperature	E417.25(j)(6)	
All-Fire Current	E417.25(j)(1)	⅙ Lot Sample
Operating Current	E417.25(j)(2)	⅙ Lot Sample
Low Temperature	E417.25(j)(7)	
All-Fire Current	E417.25(j)(1)	⅙ Lot Sample
Operating Current	E417.25(j)(2)	⅙ Lot Sample

[1] These environmental tests shall be performed at the qualification test levels.
[2] The high temperature storage test is optional. If performed, the lot will have an initial service life of three years. If not performed, the lot will have an initial service life of one year.
[3] The lot sample must be 10 percent of the production lot but not less than 30 electro explosive devices.

TABLE E417.25–4

Electro explosive device qualification tests [1]	Reference E417.7	Quantity [5] X=				
		5	SS [6]	SS [7]	SS [8]	105
Component Examination	E417.5					
Visual Inspection	E417.5(b)	X	X	X	X	X
Dimension	E417.5(c)	X	X	X	X	X
Leakage	E417.5(h)	X	X	X	X	X
X-ray and N-ray	E417.5(f)	X	X	X	X	X
Performance Verification	E417.3(e)					
Static Discharge	E417.25(i)	X	X	X	X	X
Status-of-Health	E417.25(h)	X	X	X	X	X
Component Examination	E417.5	X	X	X	X	X
Visual Inspection	E417.5(b)	X	X	X	X	X
Dimension	E417.5(c)	X	X	X	X	X
Leakage	E417.5(h)	X	X	X	X	X
X-ray and N-ray	E417.5(f)	X	X	X	X	X
Radio Frequency Impedance	E417.25(k)		10			
Radio Frequency Sensitivity	E417.25(l)		X			
No-Fire Level	E417.25(m)			X		
All-Fire Level	E417.25(n)				X	
Non-Operating Environment Tests and Operating Environment Tests:.	E417.9, E417.11					
Thermal Cycling [2]	E417.11(h)					X
High Temperature Storage [3]	E417.9(c)					30
Shock [2]	E417.11(e)					X
Random Vibration [2]	E417.11(c)					X
No-Fire Verification	E417.25(p)					30
Tensile Load [4]	E417.9(j)					30
Performance Verification	417.3(e)					
Static Discharge	E417.25(i)	X				X
Status-of-Health	E417.25(h)	X				X
Component Examination	E415.5					
Visual Inspection	E417.5(b)	X				X
Leakage	E417.5(h)	X				X
X-ray and N-ray	E417.5(f)	X				X
Firing Tests	E417.25(j)					
Ambient Temperature	E417.25(j)					
All-Fire Current	E417.25(j)(1)					15
Operating Current	E417.25(j)(2)					15
22 Amps Current	E417.25(j)					5
High Temperature	E417.25(j)(6)					
All-Fire Current	E417.25(j)(1)					15
Operating Current	E417.25(j)(2)					15
22 Amps Current	E417.25(j)					5
Low Temperature	E417.25(j)(7)					
All-Fire Current	E417.25(j)(1)					15

TABLE E417.25–4—Continued

Electro explosive device qualification tests [1]	Reference E417.7	Quantity [5] X=				
		5	SS [6]	SS [7]	SS [8]	105
Operating Current	E417.25(j)(2)					15
22 Amps Current	E417.25(j)					5

[1] All sample electro explosive devices used in qualification testing must be from a production lot that has passed the lot acceptance tests required by Table E417.25–3.
[2] These environmental tests shall be performed at the qualification environmental test levels.
[3] This test is optional. If performed, the lot will have an initial service life of three years. If not performed, the lot will have an initial service life of one year.
[4] This test is not required if other tests verify that each electro explosive device is not damaged during installation.
[5] For each column, the quantity required at the top of the column shall be from the same production lot and shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each sample tested shall be selected from the original quantity of samples for that column.
[6] The statistical sample (SS) quantity needed to perform a statistical firing series to determine the radio frequency sensitivity of the electro explosive device shall be subjected to each test designated with an X. The quantity must be greater than the 10 samples needed for the radio frequency impedance tests.
[7] The statistical sample (SS) quantity needed to perform a statistical firing series to determine the electro explosive device's no-fire energy level shall be subjected to each test designated with an X.
[8] The statistical sample (SS) quantity needed to perform a statistical firing series to determine the electro explosive device's all-fire energy level shall be subjected to each test designated with an X.

TABLE E417.25–5

Electro explosive device age surveillance tests	Reference E417.15	Quantity [2]	
		1 Year [3] X=5	3 Years [4] X=10
Component Examination	E417.5		
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Performance Verification	E417.3(e)		
Static Discharge	E417.25(i)	X	X
Status-of-Health	E417.25(h)	X	X
Non-Operating Environment Tests and Operating Environment Tests [1]	E417.9, E417.11		
Thermal Cycling	E417.11(h)	X	X
High Temperature Storage	E417.9(c)	X	X
Shock	E417.11(e)	X	X
Random Vibration	E417.11(c)	X	X
Performance Verification	E417.3(e)		
Status-of-Health	E417.25(h)	X	X
Component Examination	E417.5		
Visual Inspection	E417.5(b)	X	X
Leakage	E417.5(h)	X	X
X-Ray and N-ray	E417.5(f)	X	X
Firing Tests	E417.25(j)		
All-Fire Current	E417.25(j)(1)		
Ambient Temperature	E417.25(j)(1)	1	3
High Temperature	E417.25(j)(6)	2	3
Low Temperature	E417.25(j)(7)	2	4

[1] All environmental tests shall be performed at the qualification test levels.
[2] For each column, the quantity of sample electro explosive devices required at the top of the column shall be from the same production lot and shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each electro explosive device shall be selected from the original samples for that column.
[3] Five electro explosive devices from the same lot shall be tested to extend the service life of the remaining electro explosive devices from the same lot for one year.
[4] Ten electro explosive devices from the same lot shall be tested to extend the service life of the remaining electro explosive devices from the same lot for three years.

TABLE E417.25–6

Safe and arm rotor lead and booster charge lot acceptance tests	Reference E417.13(a)	Quantity
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100%
Dimension	E417.5(c)	100%
Leakage	E417.5(h)	100%
X-ray and N-ray	E417.5(f)	100%
Non-Operating Environment Tests and Operating Environment Tests	E417.9, E417.11	
Thermal Cycling [1]	E417.11(h)	Lot Sample [3]

TABLE E417.25–6—Continued

Safe and arm rotor lead and booster charge lot acceptance tests	Reference E417.13(a)	Quantity
High Temperature Storage[2]	E417.9(c)	Lot Sample
Component Examination	E417.5	
Leakage	E417.5(h)	Lot Sample
X-Ray and N-ray	E417.5(f)	Lot Sample
Firing Tests	E417.25(j)	
High Temperature	E417.25(j)(6)	½ Lot Sample
Low Temperature	E417.25(j)(7)	½ Lot Sample

[1] These environmental tests shall be performed at the qualification test levels.
[2] The high temperature storage test is optional. If performed, the lot will have an initial service life of five years. If not performed, the lot will have an initial service life of one year.
[3] The lot sample size must be 10 percent of the lot, but not less than 10 units.

TABLE E417.25–75

Safe and arm rotor lead and booster charge qualification tests	Reference E417.17	Quantity[3] X=21
Component Examination	E417.5	
Visual Inspection	E417.5(b)	X
Dimension	E417.5(c)	X
Leakage	E417.5(h)	X
X-ray and N-ray	E417.5(f)	X
Non-Operating Environment Tests and Operating Environment Tests	E417.9, E417.11	
Thermal Cycling[1]	E417.11(h)	X
High Temperature Storage[2]	E417.9(c)	10
Shock[1]	E417.11(e)	X
Random Vibration[1]	E417.11(c)	X
Component Examination	E417.5	
X-Ray and N-ray	E417.5(f)	X
Leakage	E417.5(h)	X
Firing Tests	E417.25(j)	
Ambient Temperature	E417.25(j)	7
High Temperature	E417.25(j)(6)	7
Low Temperature	417.25(j)(7)	7

[1] These environmental tests shall be performed at the qualification test levels.
[2] The high temperature storage test is optional. If performed, the lot will have an initial service life of five years. If not performed, the lot will have an initial service life of one year.
[3] The same 21 sample components, from the same production lot, shall be subjected to each test designated with an X. For tests designated with a quantity of less than 21, each component tested shall be selected from the original 21 sample components.

TABLE E417.25–8

Safe and arm rotor lead and booster charge age surveillance tests	Reference E417.15	Quantity[2]	
		1 Year([3]) X=5	5 Years[4] X=10
Component Examination	E417.5		
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X
Leak	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Non-Operating Environment Tests and Operating Environment Tests	E417.9, E417.11		
Thermal Cycling[1]	E417.11(h)	X	X
High Temperature Storage	E417.9(c)	....	X
Component Examination	E417.5		
Leakage	E417.5(h)	X	X
X-Ray and N-ray	E417.5(f)	X	X
Firing Tests	E417.25(j)		
High Temperature	E417.25(j)(6)	2	5
Low Temperature	417.25(j)(7)	3	5

[1] These environmental tests shall be performed at the qualification test levels.
[2] For each column, the quantity of sample components required at the top of the column shall be from the same production lot and shall be subjected to each test designated with a X. For a test designated with a lessor quantity, each component tested shall be selected from the original samples for that column.
[3] The test lot sample quantity shall be equal to five for tests to extend the service life of components remaining from the same lot for one year.
[4] The test lot sample quantity shall be equal to 10 for tests to extend the service life of components remaining from the same lot for five years.

(b) *Safe and arm device status-of-health.* A safe and arm device shall be subjected to status-of-health tests performed in accordance with E417.3(g). These tests must include measurements of insulation resistance from pin-to-pin and pin-to-case, safe and arm transition time, and bridgewire resistance consistency through multiple transition cycles.

(c) *Safe and arm transition.* A safe and arm shall be tested to demonstrate that the safe and arm transition, such as rotational or sliding operation, functions according to its performance specifications. At a minimum, the following performance parameters shall be validated:

(1) Testing must verify that the safe and arm monitors accurately determine safe and arm transition and whether the safe and arm device is in the proper configuration.

(2) Transition testing must verify that a safe and arm device is not susceptible to inadvertent initiation or degradation in performance of the electro-explosive device during preflight processing.

(3) Transition testing must demonstrate the ability of a safe and arm device to withstand five times the maximum predicted number of arming cycles without degradation in performance.

(d) *Stall.* A safe and arm device shall be tested to demonstrate that its performance is not degraded after being locked in its safe position and subjected to an operating arming voltage for the maximum predicted time that could occur inadvertently during launch processing or for five minutes, whichever time is greater.

(e) *Safety tests.* The following tests shall be performed to demonstrate that a safe and arm device can be handled and implemented safely:

(1) *Containment.* A safe and arm device shall be tested to demonstrate that it will not fragment when any internal electro explosive device or rotor charge is initiated.

(2) *Barrier functionality.* Testing shall be performed to demonstrate that, when in its safe position, if a safe and arm device's internal electro explosive devices is initiated, the ordnance output will not propagate to an explosive transfer system that is configured for flight. Test firings shall be performed at high and low temperature extremes in accordance with the following:

(i) High temperature firings shall be initiated at the high temperature design specification or a 71°C workmanship screening level, whichever is higher.

(ii) Low temperature firings shall be initiated at the low temperature design specification or a −54°C workmanship screening level, whichever is lower.

(3) *Extended stall.* A safe and arm device shall be tested to verify that it does not inadvertently initiate when locked in its safe position and subjected to a continuous operating arming voltage for the maximum predicted time that could occur accidentally during launch processing or one hour, whichever is greater.

(4) *Manual safing.* A safe and arm device shall be tested to demonstrate that it can be manually safed in accordance with its performance specifications.

(5) *Safing interlock.* A safe and arm device shall be tested to demonstrate that its safing interlock prevents arming when operational arming current is applied in accordance with its performance specifications.

(6) *Safing verification.* A safe and arm device shall be tested to demonstrate that, while in the safe position, any internal electro explosive device will not initiate if the safe and arm device input circuit is accidentally subjected to a firing voltage, such as a command receiver or inadvertent separation destruct system output.

(f) *Safe and arm thermal performance.* Testing shall be performed which demonstrates that the safe and arm device satisfies its performance specifications when subjected to operating and workmanship thermal environments. Tests performed while the safe and arm device is subjected to the design thermal environments must include the following:

(1) A safe and arm device shall be placed in its arm position and the bridgewire continuity shall be continuously monitored to detect any variations in amplitude.

(2) The bridgewire resistance shall be measured for the first and last thermal cycle at the high and low temperature dwells. The bridgewire resistance must be within its design specification.

(3) A safe and arm device shall be cycled through five arm and safe cycles and the bridgewire continuity shall be measured during each cycle for consistency. The cycle time shall also be measured during this test to verify that it is within its design specification.

(g) *Safe and arm dynamic performance.* Testing shall be performed which demonstrates that the safe and arm device satisfies its performance specifications when subjected to dynamic environments, such as vibration and shock, and is in accordance with its design specification. Tests performed while the safe and arm device is subjected to each design dynamic environment must include the following:

(1) A safe and arm device shall be placed in the arm position and bridgewire continuity shall be continuously monitored to detect any variations in amplitude with an accuracy of 1⁄10 millisecond.

(2) A safe and arm device's monitor circuits shall be continuously monitored to detect any variations in amplitude with an accuracy of one millisecond.

(3) A safe and arm device shall be monitored to verify that it remains in the locked-armed position throughout dynamic environment testing.

(h) *Electro explosive device status-of-health.* An electro explosive device shall be subjected to status-of-health tests performed in accordance with E417.3(g). These tests shall include tests of insulation resistance and bridgewire continuity.

(i) *Static discharge.* An electro explosive device shall be tested to verify that it can withstand an electrostatic discharge that it could experience from personnel or conductive surfaces without firing or degradation in performance. This test must include subjecting the electro explosive device to a 25k-volt, 500-picofarad pin-to-pin discharge through a 5k-ohm resistor and a 25k-volt, 500-picofarad pin-to-case discharge with no resistor or to the maximum predicted electrostatic discharge, whichever is greater.

(j) *Firing tests.* Test firings shall be performed on safe and arm device, electro-explosive device, rotor lead, and booster charge samples to establish that the initiation and transfer of ordnance charges meets performance requirements. The number of samples to be fired and the test conditions, including firing current and temperature, must be in accordance with the test matrices in this section and the following:

(1) The safe and arm device and electro-explosive device all-fire current test firings required by the test matrices shall be performed using the manufacturer's specified all-fire current value.

(2) The safe and arm device and electro-explosive device operating current test firings required by the test matrices shall be performed using the launch vehicle operating value if known at the time of testing. If the operating current is unknown, testing shall be performed using at least 200% of the all-fire current value.

(3) All safe and arm device and electro-explosive device test firings shall be performed using a current source that duplicates the operating output waveform and impedance.

(4) A rotor lead or booster charge shall be tested to demonstrate that it will be initiated by a flight configured energy source and to demonstrate that its output energy transfer meets its design specification.

(5) Each test shall include measurements, such as swell cap or dent block measurements, to verify that the ordnance output is within its performance specification.

(6) The high temperature test firings required by the test matrices must be initiated while the sample it subjected to the design specification high temperature level or at a +71 °C workmanship screening level, whichever is higher.

(7) The low temperature test firings required by the test matrices shall be initiated while the sample is subjected to the design specification low temperature level or at a minus 54 °C workmanship screening level, whichever is lower.

(8) For a safe and arm device that has more than one internal electro explosive device, each firing test of the safe and arm device must demonstrate that the initiation of one internal electro explosive device does not affect the performance of any other internal electro explosive device.

(k) *Radio frequency impedance.* Tests shall be performed during qualification testing to determine the radio frequency impedance of an electro explosive device. This impedance value is used to perform the flight termination system radio frequency susceptibility analysis.

(l) *Radio frequency sensitivity.* A statistical firing series shall be performed during qualification testing to determine the radio frequency no-fire energy level of the electro explosive device. The demonstrated radio frequency no-fire energy level must not exceed the level used in the flight termination system design and analysis.

(m) *Electro explosive device no-fire energy level verification.* A statistical firing series shall be performed during qualification testing to determine the highest electrical energy level at which an electro explosive device will not fire with a reliability of 0.999 at a 95% confidence level when subjected to a continuous current pulse. The demonstrated no-fire energy level must not be less than the no-fire energy level used in the flight termination system design and analysis.

(n) *Electro explosive device all-fire energy level verification.* A statistical firing series shall be performed during qualification testing to determine the lowest electrical energy level at which the electro explosive device will fire with a reliability of 0.999 at a 95% confidence level when subjected to a current pulse that simulates the launch vehicle flight termination system firing characteristics. The demonstrated all-fire energy level must not be greater than the all-fire energy level use in the flight termination system design and analysis.

(o) *Barrier alignment.* A safe and arm device shall be subjected to a statistical test firing series to verify the safe to arm and arm to safe transition motion that provides ordnance initiation with a reliability of 0.999 at a 95% confidence level and the transition motion that provides no ordnance initiation with a reliability of 0.999 at a 95% confidence level. These test firings may be performed in a reusable safe and arm subassembly that simulates the flight configuration.

(p) *No-fire verification.* Testing shall be performed to demonstrate that a flight configured electro explosive device within an armed safe and arm device will not inadvertently initiate and that its performance will not be degraded when exposed to the maximum predicted circuit leakage. The time used for this test must reflect the actual worst-case exposure that could occur in an operating condition. The minimum level used for this test must be 1 amp/1 watt for five minutes.

E417.27 Exploding Bridgewire Firing Units and Exploding Bridgewires

(a) *General.* All exploding bridgewire firing units and all exploding bridgewires shall be tested to demonstrate that they satisfy their performance specifications when subjected to non-operating and operating environments. This testing shall be conducted in accordance with the acceptance, qualification, and age surveillance test matrices and accompanying requirements of this section.

TABLE E417.27–1

Exploding bridgewire firing unit acceptance tests	Reference E417.13	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Identification	E417.5(e)	100
Performance Verification [1]	E417.3(e)	100
Status-of-Health	E417.27(b)	100
Input Command Processing	E417.27(c)	100
High Voltage Output	E417.27(d)	100
Output Monitors	E417.27(e)(2)	100
Abbreviated Performance Verification [2]	E417.3(f)	
Abbreviated Status-of-Health	E417.27(f)	100
Abbreviated Command Processing	E417.27(g)	100
Output Monitors	E417.27(h)	100
Operating Environment Tests	E417.13	
Thermal Cycling [3]	E417.13(d)	100
Thermal Vacuum [3]	E417.13(e)	100
Acoustic	E417.13(c)	100
Random Vibration	E417.13(b)	100
Leakage	E417.5(h)	100

[1] These tests shall be performed prior to the first and after the last operating environment test.
[2] Abbreviated performance verification tests shall be performed during the operating environment tests.
[3] The abbreviated status-of-health parameters and output monitors shall be continuously monitored during all thermal cycles and transitions.

TABLE E417.27–2

Exploding bridgewire firing unit qualification tests	Reference E417.7	Quantity		
		X=1	X=1	X=1
Acceptance Tests [1]	Table E417.27–1	X	X	X
Performance Verification [2]	E417.3(e)	X	X	X
Status-of-Health	E417.27(b)	X	X	X
Input Command Processing	E417.27(c)	X	X	X
High Voltage Output	E417.27(d)	X	X	X
Abbreviated Performance Verification [3]	E417.3(f)	....	....	....
Abbreviated Status-of-Health	E417.27(f)	X	X	X
Abbreviated Command Processing	E417.27(g)	X	X	X
Abbreviated Output Monitoring	E417.27(h)	X	X	X
Non-Operating Environment Tests	E417.9	X	X	X
Storage Temperature	E417.9(b)	X	X	X
Transportation Shock	E417.9(d)	X	X	X
Bench Handling Shock	E417.9(e)	X	X	X
Transportation Vibration	E417.9(f)	X	X	X
Fungus Resistance	E417.9(g)	X	....	....
Salt Fog	E417.9(h)	X	....	....
Fine Sand	E417.9(I)	X	....	....
Operating Environment Tests	E417.11	....	....	....
Thermal Cycling [4]	E417.11(h)	X	X	X
Humidity	E417.11(g)	X	X	X
Thermal Vacuum [4]	E417.11(I)	X	X	X

TABLE E417.27–2—Continued

Exploding bridgewire firing unit qualification tests	Reference E417.7	Quantity		
		X=1	X=1	X=1
Acceleration	E417.11(f)	X	X	X
Shock	E417.11(e)	X	X	X
Sinusoidal Vibration	E417.11(b)	X	X	X
Acoustic	E417.11(d)	X	X	X
Random Vibration	E417.11(c)	X	X	X
Electromagnetic Interference and Compatibility	E417.11(j)	X	X	....
Explosive Atmosphere	E417.11(k)	....	X	....
Repetitive functioning	E417.27(i)	X	X	X
Output Monitoring	E417.27(e)	X	....	....
Leakage	E417.5(h)	X	X	X
Disassembly	E417.5(g)	X	X	X

[1] Each qualification test component must successfully complete all acceptance tests before undergoing qualification testing.
[2] These tests shall be performed prior to the first and after the last environmental test.
[3] Abbreviated performance tests shall be performed during each operating environment test.
[4] Abbreviated status-of-health and output monitor testing shall be performed during all thermal cycles and transitions.

TABLE E417.27–3

Exploding bridgewire lot acceptance tests	Reference	Quantity
Component Examination and	E417.5	
Performance Verification	E417.3(e)	
Visual Inspection	E417.5(b)	100%
Dimension	E417.5(c)	100%
Static Discharge	E417.27(j)	100%
Status-of-Health	E417.27(k)	100%
Safety Devices [1]	E417.27(l)	100%
Leakage	E417.5(h)	100%
X-ray and N-ray	E417.5(f)	100%
Non Operating Environment Tests and	E417.9	
Operating Environment Tests [2]	E417.11	
Thermal Cycling [2]	E417.11(h)	Lot Sample [4]
High Temperature Storage [3]	E417.9(c)	Lot Sample
Shock [2]	E417.11(e)	Lot Sample
Random Vibration [2]	E417.11(c)	Lot Sample
Component Examination and	E417.5	
Performance Verification	E417.3(e)	
Status of Health	E417.27(k)	Lot Sample
Safety Devices [2]	E417.27(l)	Lot Sample
Leakage	E417.5(h)	Lot Sample
X-ray and N-ray	E417.5(f)	Lot Sample
Firing Tests	E417.27(m)	
Ambient Temperature	E417.27(m)	
All-Fire Voltage	E417.27(m)(1)	⅙ Lot Sample
Operating Voltage	E417.27(m)(2)	⅙ Lot Sample
High Temperature	E417.27(m)(4)	
All-Fire Voltage	E417.27(m)(1)	⅙ Lot Sample
Operating Voltage	E417.27(m)(2)	⅙ Lot Sample
Low Temperature	E417.27(m)(5)	
All-Fire Voltage	E417.27(m)(1)	⅙ Lot Sample
Operating Voltage	E417.27(m)(2)	⅙ Lot Sample

[1] The safety device tests shall be performed only if the exploding bridgewire contains internal protection circuitry such as a spark gap.
[2] These environmental tests shall be performed at the qualification test levels.
[3] The high temperature storage test is optional. If performed, the lot will have an initial service life of three years. If not performed, the lot will have an initial service life of one year.
[4] The lot sample must be 10 percent of the production lot but not less than 30 exploding bridgewires.

TABLE E417.27–4

Exploding bridgewire qualification tests	Reference	Quantity [4] X=				105
		5	SS [5]	SS [6]	SS [7]	
Lot Acceptance Tests [1]	Table E417.27–3					
Component Examination and Performance Verification.	E417.5, E417.3(e)					
Visual Inspection	E417.5(b)	X	X	X	X	X
Dimension	E417.5(c)	X	X	X	X	X

TABLE E417.27–4—Continued

Exploding bridgewire qualification tests	Reference	Quantity [4] X=				105
		5	SS [5]	SS [6]	SS [7]	
Static Discharge	E417.27(j)	X	X	X	X	X
Status-of-Health	E417.27(k)	X	X	X	X	X
Safety Devices [2]	E417.27(l)	X	X	X	X	X
Leakage	E417.5(h)	X	X	X	X	X
X-ray and N-ray	E417.5(f)	X	X	X	X	X
Radio Frequency Impedance	E417.27(n)		10			
Radio Frequency Sensitivity	E417.27(o)		X			
No-Fire Level	E417.27(p)					
All-Fire Level	E417.27(q)			X	X	
Non-Operating Environment Tests and Operating Environment Tests.	E417.9, E417.11					
Storage Temperature	E417.9(b)					X
Transportation Shock	E417.9(d)					X
Bench Handling Shock	E417.9(e)					X
Transportation Vibration	E417.9(f)					X
Fungus Resistance	E417.9(g)					5
Salt Fog	E417.9(h)					5
Fine Sand	E417.9(i)					5
Thermal Cycling	E417.11(h)					X
High Temperature Storage [3]	E417.9(c)					30
Shock	E417.11(e)					X
Random Vibration	E417.11(c)					X
Handling Drop	E417.9(k)					X
Tensile Load	E417.9(j)	X				
Abnormal Drop	E417.9(l)	X				
Component Examination and Performance Verification.	E417.5, E417.3(e)					
Status of Health	E417.27(k)					X
Safety Devices [2]	E417.27(l)					X
Leakage	E417.5(h)					X
X-ray and N-ray	E417.5(f)					X
Firing Tests	E417.27(m)					
Ambient Temperature	E417.27(m)					
All-Fire Voltage	E417.27(m)(1)					15
Operating Voltage	E417.27(m)(2)					15
Twice the Operating Voltage	E417.27(m)					5
High Temperature	E417.27(m)(4)					
All-Fire Voltage	E417.27(m)(1)					15
Operating Voltage	E417.27(m)(2)					15
Twice the Operating Voltage	E417.27(m)					5
Low Temperature	E417.27(m)(5)					
All-Fire Voltage	E417.27(m)(1)					15
Operating Voltage	E417.27(m)(2)					15
Twice the Operating Voltage	E417.27(m)					5

[1] All sample-exploding bridgewires used in qualification testing must be from a production lot that has passed the lot acceptance tests required by table E417.27–3.

[2] The safety device tests shall be performed only if the exploding bridgewire contains internal protection circuitry such as a spark gap.

[3] The high temperature storage test is optional. If performed, the lot will have an initial service life of three years. If not performed, the lot will have an initial service life of one year.

[4] For each column, the quantity required at the top of the column shall be selected from the same production lot and shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each sample exploding bridgewire tested shall be selected from the original samples for column.

[5] The statistical sample (SS) quantity needed to perform a statistical firing series to determine the radio frequency sensitivity of the exploding bridgewire shall be subjected to each test designated with an X. The quantity must be greater than the 10 samples needed for the radio frequency impedance tests.

[6] The statistical sample (SS) quantity needed to perform a statistical firing series to determine the electro exploding bridgewire's no-fire energy shall be subjected to each test designated with an X.

[7] The statistical sample (SS) quantity needed to perform a statistical firing series to determine the exploding bridgewire's all-fire energy level shall be subjected to each test designated with an X.

TABLE E417.27–5

Explosive bridgewire (EBW) aging surveillance tests	Reference E417.15	Quantity [3]	
		1 year [4] X=5	3 years [5] X=10
Component examination and Performance Verification	E417.5, E417.3(e)		
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X

TABLE E417.27–5—Continued

Explosive bridgewire (EBW) aging surveillance tests	Reference E417.15	Quantity [3] 1 year [4] X=5	Quantity [3] 3 years [5] X=10
Static Discharge	E417.27(j)	X	X
Status-of-Health	E417.27(k)	X	X
Safety Devices [1]	E417.27(l)	X	X
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Non-Operating Environment Tests and Operating Environment Tests [1]	E417.9, E417.11		
Thermal Cycling	E417.11(h)	X	X
High Temperature Storage	E417.9(c)	X	X
Shock	E417.11(e)	X	X
Random Vibration	E417.11(c)	X	X
Component examination and Performance Verification	E417.5, E417.3(e)		
X-ray and N-ray	E417.5(f)	X	X
Status-of-Health	E417.27(k)	X	X
Safety Devices [2]	E417.27(l)	X	X
Leakage	E417.5(h)	X	X
Firing Tests	E417.27(m)		
All Fire Voltage	E417.27(m)(1)		
Ambient Temperature	E417.27(m)(1)	1	3
High Temperature	E417.27(m)(4)	2	3
Low Temperature	E417.27(m)(5)	2	4

[1] All environmental tests shall be performed at qualification levels.
[2] Safety device tests shall be performed only if the exploding bridgewire contains internal protection circuitry such as a spark gap.
[3] For each column, the quantity required at the top of the column shall be selected from the same production lot and shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each sample exploding bridgewire tested shall be selected from the original samples for column.
[4] Five exploding bridgewires from the same lot shall be tested to extend the service life of the remaining exploding bridgewires from the same lot for one year.
[5] Ten exploding bridgewires from the same lot shall be tested to extend the service life of the remaining exploding bridgewires from the same lot for three years.

(b) *Exploding bridgewire firing unit status-of-health.* An exploding bridgewire firing unit shall be subjected to status-of-health tests performed in accordance with E417.3(g) to verify that each critical parameter is within its performance specification. These tests shall include measurements of input current, pin-to-pin and pin-to-case resistances, trigger circuit threshold, capacitor charge time and arming time to verify that they are within their performance specification.

(c) *Exploding bridgewire firing unit input command processing.* An exploding bridgewire firing unit shall be tested to demonstrate that the input trigger circuit will function within performance specifications when exposed to maximum predicted normal and abnormal flight environments in accordance with the following:

(1) An exploding bridgewire firing unit must be tested to demonstrate sufficient margin over the worst-case trigger signal that could be delivered on the launch vehicle. The trigger circuitry must meet the following minimum criteria:

(i) The amplitude sensitivity of the firing unit trigger circuit shall be tested to demonstrate that it satisfies its performance specifications when subjected to a worst-case low input signal. Component testing must demonstrate that the firing unit triggers at 50% of the amplitude and 50% of the pulse duration of the lowest trigger signal that could be delivered during flight.

(ii) The amplitude sensitivity of the firing unit trigger circuit shall be tested to demonstrate that it satisfies its performance specifications when subjected to worst-case high input signal. Component testing must demonstrate that the firing unit triggers at 120% amplitude and the pulse duration of the worst-case trigger signal that could be delivered during flight.

(2) An exploding bridgewire firing unit shall be tested to demonstrate that it does not degrade in performance when subjected to the maximum input voltage of the open circuit voltage of the power source, ground or airborne, and the minimum input voltage of the loaded voltage of the power source.

(3) Control or switching circuits critical to the reliable operation of an exploding bridgewire firing unit shall be tested to demonstrate that they do not change state when subjected to a minimum input power drop-out for a period of 50 milliseconds.

(4) An exploding bridgewire firing unit shall be tested to demonstrate that its response time is in accordance with its performance specification with input at the specified minimum and maximum vehicle supplied trigger signal.

(5) An exploding bridgewire firing unit with differential input shall be tested to demonstrate that it operates according to its performance specification with all input combinations at the specified trigger amplitude input signals.

(d) *Exploding bridgewire firing unit high voltage circuitry.* An exploding bridgewire firing unit shall be tested to demonstrate that its high voltage circuitry will function according to its performance specifications to initiate the exploding bridgewire when subjected to the maximum predicted normal and abnormal flight conditions in accordance with the following:

(1) An exploding bridgewire firing unit shall meet performance specifications when tested at worst-case high and low arm voltages that could be delivered during flight.

(2) Exploding bridgewire firing unit charging and output circuitry shall be tested to ensure the output wave form, rise-time and amplitude delivers no less than a 50% voltage margin to the exploding bridgewire using the identical test parameters, such as capacitor values and circuit and load impedance, as those used for the exploding bridgewire all-fire value.

(3) An exploding bridgewire firing unit shall be monitored to ensure there is no arcing or corona during high voltage discharge.

(4) High energy trigger circuits used to initiate an exploding bridgewire firing unit's main firing capacitor must be tested to ensure the output signal delivers no less than a 50% voltage margin at the nominal threshold level.

(e) *Exploding bridgewire firing unit output monitoring.* An exploding bridgewire firing unit shall be tested to verify that the failure of any non-flight termination system vehicle system equipment or ground support equipment will not degrade the performance or reliability of the firing unit. Flight termination system circuitry that interfaces with non-flight termination system vehicle systems and ground support equipment shall be tested to ensure failure modes will not degrade flight termination system performance. In addition, all monitor circuits shall be tested to ensure their functionality during preflight checkout and flight environments. At a minimum, the following tests shall be performed:

(1) An exploding bridgewire firing unit shall be tested to verify that its performance is not degraded when its monitor circuits and output ports are subjected to a short circuit with the worst-case positive and negative voltage capable of being supplied by the monitor batteries or ground power supplies.

(2) An exploding bridgewire firing unit's monitor circuits shall be tested to verify that all the required monitor signals are within their performance specifications. These monitor signals shall include the voltage of all high voltage capacitors and arm power to the firing unit.

(f) *Exploding bridgewire firing unit abbreviated status-of-health.* Abbreviated status-of-health tests represent a limited sampling of critical parameters, and are performed during dynamic tests to identify potential component degradation. These tests shall include measurements of the exploding bridgewire firing unit's input, which shall be continuously monitored to detect variations in amplitude with an accuracy of one millisecond.

(g) *Exploding bridgewire firing unit abbreviated command processing.* All flight critical functions of an exploding bridgewire firing unit shall be tested to demonstrate that the component meets its performance specifications when subjected to dynamic environments. An exploding bridgewire firing unit shall be commanded to fire throughout each environment while function time and the high voltage output waveform is monitored to verify that they each satisfy their performance specifications.

(h) *Exploding bridgewire firing unit environmental output monitoring.* An exploding bridgewire firing unit's output monitors shall be continuously monitored to detect variations in amplitude with an accuracy of 1 millisecond or any condition that may indicate degradation in performance.

(i) *Exploding bridgewire firing unit repetitive function.* An exploding bridgewire firing unit shall meet its performance specifications when subjected to worst-case repetitive functioning during acceptance, launch site processing, testing and flight. An exploding bridgewire firing unit output circuit shall be tested to demonstrate that it withstands, without degradation in performance, repetitive functioning for five times the worst-case number of cycles required for acceptance, checkout and operations, including retests due to schedule delays.

(j) *Static Discharge.* An exploding bridgewire shall be tested to verify that it can withstand, without firing or degradation in performance, an electrostatic discharge that it could experience from personnel or conductive surfaces. This test must include subjecting an exploding bridgewire to a 25k-volt, 500-picofarad pin-to-pin discharge through a 5k-ohm resistor and a 25k-volt, 500-picofarad pin-to-case discharge with no resistor or to the maximum predicted electrostatic discharge, whichever is greater.

(k) *Exploding bridgewire status-of-health.* An exploding bridgewire shall be subjected to status-of-health tests performed in accordance with E417.3(g) to verify that each critical parameter is within its performance specification. These tests shall include measurements of bridgewire insulation resistance at operating voltage.

(l) *Exploding bridgewire safety devices.* An exploding bridgewire that incorporates any safety device shall be tested to ensure that the safety device functions within its performance specifications and will not degrade the exploding bridgewire's performance or reliability after exposure to environmental qualification testing. The tests shall include static gap breakdown, dynamic gap breakdown, and specification hold-off voltage under sustained exposure.

(m) *Firing tests.* An exploding bridgewire shall be tested to ensure that it satisfies its performance specifications when subjected to qualification stress conditions. An exploding bridgewire shall be test fired utilizing a high voltage initiation source that duplicates the exploding bridgewire firing unit output waveform and impedance, including high voltage cabling. Each test shall include measurements, such as swell cap or dent block measurements, to verify that the ordnance output is within its performance specifications. The number of samples to be fired and the test conditions, including firing current and temperature, must be in accordance with the test matrices in this section and the following:

(1) The all-fire test firings required in the test matrices shall be performed using the manufacturer's specified all-fire energy level. The all-fire energy level must be specified in terms of voltage, current and pulse duration.

(2) The operating test firings required in the test matrices shall be performed using the firing unit's operating specification. If the operating energy is unknown, testing shall be performed using at least 200% of the all-fire current value.

(3) All test firings shall be performed using a firing source that duplicates the operational output waveform and impedance.

(4) All high temperature test firings required by the test matrices must be initiated while the sample it subjected to the design specification high temperature level or at a +71 °C workmanship screening level, whichever is higher.

(5) The low temperature test firings required in the test matrices shall be initiated at the design specification low temperature level or at a −54 °C workmanship screening level, whichever is lower.

(n) *Radio frequency impedance.* The radio frequency impedance of an exploding bridgewire shall be determined during qualification testing. This impedance shall be used to ensure that the system radio frequency susceptibility analysis utilizes a worst-case parameter, such as DC resistance.

(o) *Radio frequency sensitivity.* A statistical firing series shall be performed during qualification testing to determine the radio frequency sensitivity of the exploding bridgewire. The demonstrated radio frequency no-fire energy level must not exceed the level used in the flight termination system design and analysis.

(p) *No-fire level.* A statistical firing series shall be performed during qualification testing to determine the highest electrical energy level at which the exploding bridgewire will not fire with a reliability of 0.999 with a 95% confidence level when subjected to a continuous current pulse. The demonstrated no-fire energy level must not be less than the no-fire energy level used in the flight termination system design and analysis.

(q) *All-fire level.* A statistical firing series shall be performed during qualification testing to determine the lowest electrical energy level at which the exploding bridgewire will fire with a reliability of 0.999 with a 95% confidence level when subjected to a current pulse simulating the firing unit output waveform and impedance characteristics. All firings shall utilize a flight configured exploding bridgewire, with any internal safety devices such as a spark gap. The demonstrated all-fire energy level must not exceed the all-fire energy level used in the flight termination system design and analysis.

E417.29 Ordnance interrupter.

(a) *General.* An ordnance interrupter that is part of a flight termination system shall be tested to demonstrate that it functions within its performance specifications when subjected to non-operating and operating environments. This testing shall be accomplished in accordance with the acceptance, qualification, and age surveillance test matrices and accompanying requirements of this section.

TABLE E417.29–1

Ordnance interrupter acceptance tests	Reference	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Identification	E417.5(e)	100
Performance Verification[1]	E417.3(e)	
Status-of-Health	E417.29(b)	100
Safe and arm position monitor	E417.29(c)	100

TABLE E417.29–1—Continued

Ordnance interrupter acceptance tests	Reference	Quantity (percent)
Safety Tests	E417.29(e)	
Manual Safing	E417.29(e)(4)	100
Safing Interlock	E417.29(e)(5)	100
Abbreviated Performance Verification	E417.3(f)	
Interrupter Abbreviated Performance	E417.29(f)	100
Operating Environment Tests	E417.13	
Thermal Cycling	E417.13(d)	100
Random Vibration	E417.13(b)	100
X-ray	E417.5(f)	100
Leakage	E417.5(h)	100

[1] These tests shall be performed prior to the first and after the last environmental tests.

TABLE E417.29–2

Ordnance interrupter qualification tests	Reference	Quantity X=		
		1	6	2
Barrier Alignment	E417.29(h)			
Acceptance Tests	Table E417.29–1	X	X	
Safety Tests	E417.29(e)			
Extended Stall [1]	E417.29(e)(3)	X		
Abnormal Drop [1]	E417.9(1)	X		
Containment	E417.29(e)(1)			X
Barrier Functionality	E417.29(e)(2)			X
Non-Operating Environment Tests	E417.9			
Storage Temperature	E417.9(b)		X	
Transportation Shock	E417.9(d)		X	
Bench Handling	E417.9(e)		X	
Transportation Vibration	E417.9 (f)		X	
Fungus Resistance	E417.9(g)		1	
Salt Fog	E417.9(h)		1	
Fine Sand	E417.9(i)		1	
Handling Drop	E417.9(k)		X	
Performance Verification [2]	E417.3(e)			
Status-of-Health	E417.29(b)		X	
Abbreviated Performance Verification [3]	E417.3(f)			
Interrupter Abbreviated Performance	E417.29(f)		X	
Operating Environment Tests [4]	E417.11			
Thermal Cycling	E417.11(h)		X	
Humidity	E417.11(g)		X	
Acceleration	E417.11(f)		X	
Shock	E417.11(e)		X	
Sinusoidal Vibration	E417.11(b)		X	
Acoustic	E417.11(d)		X	
Random Vibration	E417.11(c)		X	
Explosive Atmosphere	E417.11(k)		X	
Stall	E417.29(j)		X	
X-ray	E417.5(f)		X	
Leakage	E417.5(h)		X	
Disassembly	E417.(g)		2	
Firing Test	E417.(g)			
At High Temperature	E417.29(g)(4)		2	
At Low Temperature	E417.29(g)(5)		2	
Repetitive Function	E417.29(i)		X	

[1] This test is only required for ordnance interrupters containing rotor or booster charges.
[2] These tests shall be performed before the first and after the last operating environment test.
[3] These tests shall be performed during the operating environment tests.
[4] Environmental tests shall be performed at qualification levels.

TABLE E417.29–3

Ordnance interrupter rotor lead and booster charge acceptance tests [1]	Reference	Quantity
Non-Destructive Component Examination	E417.5	
Visual Inspection	E417.5(b)	100%
Dimension	E417.5(c)	100%
Leakage	E417.5(h)	100%
X-ray and N-ray	E417.5(f)	100%

TABLE E417.29–3—Continued

Ordnance interrupter rotor lead and booster charge acceptance tests [1]	Reference	Quantity
Non-Operating Environment Tests and	E417.9	
Operating Environment Tests [2]	E417.11	
Thermal Cycling	E417.11(h)	Lot Sample [4]
High Temperature Storage [3]	E417.9(c)	Lot Sample
Component Examination	E417.5	
Leakage	E417.5(h)	Lot Sample
X-ray and N-ray	E417.5(f)	Lot Sample
Firing Tests	E417.29(g)	
High Temperature	E417.29(g)(4)	1/2 Lot Sample
Low Temperature	E417.29(g)(5)	1/2 Lot Sample

[1] This matrix is only applicable to ordnance interrupters that use rotor lead charges.
[2] Environmental tests shall be performed at qualification levels.
[3] The high temperature storage test is optional. If performed, the lot will have an initial service life of five years. If not performed, the lot will have an initial service life of one year.
[4] The lot sample size must be at least 10 percent of the lot, but not less than 10 units.

TABLE E417.29–4

Ordnance interrupter rotor lead and booster charge qualification tests [1]	Reference E417.7	Quantity [4] X=21
Component Examination	E417.5	....
Visual Inspection	E417.5(b)	X
Dimension	E417.5(c)	X
Leakage	E417.5(h)	X
X-ray and N-ray	E417.5(f)	X
Non-Operating and Operating Environment Tests [2]	E417.9, E417.11	....
Thermal Cycling	E417.11(h)	X
High Temperature Storage [3]	E417.9(c)	10
Shock	E417.11(e)	X
Random Vibration	E417.11(c)	X
Component Examination	E417.5	
X-ray and N-ray	E417.5(f)	X
Leakage	E417.5(h)	X
Firing Tests	E417.29(g)	
Ambient Temperature	E417.29(g)	7
High Temperature	E417.29(g)(4)	7
Low Temperature	E417.29(g)(5)	7

[1] This matrix is only applicable to ordnance interrupters that use rotor lead charges.
[2] These environmental tests shall be performed at qualification test levels.
[3] The high temperature storage test is optional. If performed, the lot will have an initial service life of five years. If not performed, the lot will have an initial service life of one year.
[4] The same 21 sample components, from the same lot, shall be subjected to each test designated with an X. For tests designated with a quantity of less than 21, each component tested shall be selected from the original 21 sample components.

TABLE E417.29–5

Ordnance interrupter rotor lead and booster charge age surveillance tests [1]	Reference E417.15	Quantity [3] 1 Year [4] X=5	5 Years [5] X=10
Component Examination	E417.5	....	....
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X
Leak	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Non-Operating Environment Tests and Operating Environment Tests [2]	E417.9, E417.11	....	....
Thermal Cycling	E417.11(h)	X	X
High Temperature Storage	E417.9(c)	....	X
Component Examination	E417.5	....	....
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Firing Tests	E417.29(g)	....	....
High Temperature	E417.29(g)(4)	2	5
Low Temperature	E417.29(g)(5)	3	5

[1] This matrix is only applicable to ordnance interrupters that use rotor lead charges.
[2] These environmental tests shall be performed at the qualification test levels.
[3] For each column, the required quantity of sample components from the same lot shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each component shall be selected from the original samples for that column.
[4] The test lot sample quantity shall be equal to five for tests to extend the service life of components remaining from the same lot for one year.
[5] The test lot sample quantity shall be equal to 10 for tests to extend the service life of components remaining from the same lot for five years.

(b) *Status-of-health.* An ordnance interrupter shall be subjected to status-of-health tests performed in accordance with E417.3(g) to verify that each critical parameter is within its performance specification. These tests shall include measurements of safe and arm transition time.

(c) *Safe and arm position monitor.* An ordnance interrupter shall be tested to demonstrate that its transition operation, such as rotational or sliding, functions in accordance with its design specification when subjected to flight environments. In addition, the testing must demonstrate that any ordnance interrupter monitoring devices can determine, prior to flight, if the ordnance interrupter is in the proper flight configuration.

(1) The arm indication shall be verified to be present when the ordnance interrupter is armed.

(2) The safe indication shall be verified to be present when the ordnance interrupter is safed.

(d) *Ordnance initiation.* The ordnance initiation train shall be tested to ensure that it functions in accordance with the required performance specifications during normal and abnormal flight conditions. Testing shall demonstrate the capability of the ordnance systems to perform to the following requirements:

(1) Two interrupters shall be functioned during the hot and cold firing tests at the 0.999 at 95% confidence transition motion.

(2) One interrupter shall be tested to show that the performance of the ordnance train components will not be degraded when the interrupter is locked in the safe position and subjected to a continuous operating arming voltage.

(3) When dual firing paths are used within a single interrupter, all firing tests shall demonstrate that one firing path does not affect the performance of the other path.

(e) *Safety tests.* The following tests shall be performed to demonstrate that an ordnance interrupter can be handled and implemented safely:

(1) *Containment.* If an ordnance interrupter has an internal rotor charge the interrupter shall be tested to demonstrate that it will not fragment when the internal rotor charge is initiated.

(2) *Barrier functionality.* Testing shall be performed to demonstrate that, when the ordnance interrupter is in the safe position, neither the donor transfer line nor the internal rotor charge will initiate the explosive transfer system. Test firings shall be performed at high and low temperature extremes in accordance with the following:

(i) High temperature firings shall be initiated at the high temperature design specification or a 71 °C workmanship screening level, whichever is higher.

(ii) Low temperature firings shall be initiated at the low temperature design specification or a −54 °C workmanship screening level, whichever is lower.

(3) *Extended stall.* An ordnance interrupter with internal rotor or booster charges shall be tested to verify that it does not inadvertently initiate when locked in its safe position and subjected to a continuous operating arming voltage for the maximum predicted time that could occur accidentally during launch processing or one hour, whichever is greater. The ordnance interrupter need not function after being subjected to this test.

(4) *Manual safing.* An ordnance interrupter shall be tested to demonstrate that it can be manually safed in accordance with its performance specifications.

(5) *Safing interlock.* An ordnance interrupter shall be tested to demonstrate that its safing interlock prevents arming when operating arming current is applied in accordance with its performance specifications.

(f) *Interrupter abbreviated performance verification.* Abbreviated performance verification tests represent a limited sampling of critical parameters, and must be performed during dynamic tests. These tests shall ensure that all functions critical to flight termination system operation are exercised in conjunction with verification of sufficient status-of-health indications to identify potential component degradation. The ordnance interrupter must be armed for this test and the arm monitoring circuit shall be continuously monitored.

(g) *Firing tests.* Test firings shall be performed on interrupter, rotor lead, and booster charge samples to establish that the initiation and transfer of ordnance charges meets performance requirements. The number of samples to be fired and the test conditions, including firing current and temperature, must be in accordance with the test matrices in this section and the following:

(1) An interrupter shall be tested in a flight configuration using flight configured explosive transfer system lines on the input and output.

(2) A rotor lead or booster charge shall be tested to demonstrate that it will be initiated by a flight configured energy source and to demonstrate that its output energy transfer meets its design specification.

(3) A measurement technique, such as a swell cap or dent block, shall be used to verify that the explosive transfer system output satisfies its performance specifications.

(4) High temperature firings shall be initiated at the qualification high temperature or a +71 °C workmanship level, whichever is higher.

(5) Low temperature firings shall be initiated at the qualification low temperature or a minus 54 °C workmanship level, whichever is lower.

(h) *Barrier alignment.* The interrupter configuration shall be tested to determine the 0.999 at 95% confidence transition motions where reliable initiation and no initiation of the ordnance train components occurs. These firings may be performed in a reusable interrupter subassembly that reflects the flight configuration.

(i) *Repetitive Function.* Testing shall show the ability of the interrupter to withstand five times the worst-case arming cycles without degradation in performance.

(j) *Stall.* An ordnance interrupter shall be tested to demonstrate that its performance is not degraded after being locked in its safe position and subjected to an operating arming voltage for the maximum predicted time that could occur inadvertently during launch processing or for five minutes, whichever time is greater.

E417.31 Percussion Activated Device (PAD)

(a) *General.* A percussion activated device that is part of a flight termination system shall be tested to demonstrate that it functions within its performance specifications when subjected to non-operating and operating environments. This testing shall be accomplished in accordance with the acceptance, qualification, and age surveillance test matrices and accompanying requirements of this section.

TABLE E417.31–1

Percussion activated device lot acceptance tests[1]	Reference	Quantity
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100%
Dimension	E417.5(c)	100%
Identification	E417.5(e)	100%
Status of Health	E417.5(c)	100%
Leakage	E417.5(h)	100%
X-ray and N-ray	E417.5(f)	100%
Non-Operating Environment Tests and Operating Environment Tests[2]	E417.9, E417.11	
Thermal Cycling	E417.11(h)	Lot Sample[4]
High Temperature Storage[3]	E417.9(c)	Lot Sample
Shock	E417.11(e)	Lot Sample
Random Vibration	E417.11(c)	Lot Sample
Component Examination	E417.5	
Leakage	E417.5(h)	Lot Sample
Safety Tests	E417.31(b)	Lot Sample

TABLE E417.31–1—Continued

Percussion activated device lot acceptance tests[1]	Reference	Quantity
X-ray and N-ray	E417.(f)	Lot Sample
Firing Test at Specification Pull Force	E417.31(d)	
At Ambient Temperature	E417.31(d)	⅓ of Lot Sample
At High Temperature	E417.31(d)(3)	⅓ of Lot Sample
At Low Temperature	E417.31(d)(4)	⅓ of Lot Sample

[1] These tests shall be performed at the percussion activated device final assembly level.
[2] The environmental tests shall be performed at qualification test levels.
[3] The high temperature storage test is optional. If performed, the lot shall have an initial service life of three years. If the high temperature storage test is not performed, the service life shall be one year.
[4] A lot sample shall consist of 10% of the lot or nine units, whichever is greater.

TABLE E417.31–2

Percussion activated device qualification tests	Reference	Quantity[3]	
		X=1	X=21
Component Examination Tests	Table E417.31–1	X	X
Safety Tests	E417.31(b)		X
Non-Operating Environment Tests and Operating Environment Tests[1]	E417.9, E417.11	X	
Storage Temperature	E417.9(b)		X
Transportation Shock	E417.9(d)		X
Bench Handling	E417.9(e)		X
Transportation Vibration	E417.9(f)		X
Fungus Resistance	E417.9(g)		4
Salt Fog	E417.9(h)		4
Fine Sand	E417.9(i)		4
Handling Drop	E417.9(k)		X
Thermal Cycling	E417.11(h)		X
High Temperature Storage[2]	E417.9(c)		X
Humidity	E417.11(g)		4
Acceleration	E417.11(f)		X
Shock	E417.11(e)		X
Sinusoidal Vibration	E417.11(b)		X
Random Vibration	E417.11(c)		X
Component Examination	E417.5		
Leakage	E417.5(h)		X
X-ray and N-ray	E417.5(f)		X
Disassembly	E417.5(g)		3[4]
Firing Test at Specification Pull Force	E417.31(d)		
At Ambient Temperature	E417.31(d)		6
At High Temperature	E417.31(d)(3)		6
At Low Temperature	E417.31(d)(4)		6
Abnormal Drop	E417.9(1)	X	

[1] Environmental tests shall be performed at qualification test levels.
[2] The high temperature storage test is optional. If performed, the lot shall have an initial service life of three years. If not performed, the lot shall have an initial service life of one year.
[3] For each column, the required quantity of sample components from the same lot shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each component tested shall be selected from the original samples for that column.
[4] One of the three disassembled sample components shall be a sample that was subjected to all non-operating environment tests required by this test matrix except for the abnormal drop test.

TABLE E417.31–3

Percussion activated device primer charge lot acceptance tests[1]	Reference	Quantity
Component Examination[2]	E417.5	
Visual Inspection	E417.5(b)	[1] 100%
Dimension	E417.5(c)	[1] 100%
Leakage	E417.5(h)	[1] 100%
X-ray and N-ray	E417.5(f)	[1] 100%
Operating Environment Test	E417.11	
Thermal Cycle	E417.11(h)	Lot Sample[5]
Firing Tests	E417.31(f)	
All-Fire Impact[3]	E417.31(f)	
High Temperature	E417.31(f)(4)	½ Lot Sample
Low Temperature	E417.31(f)(5)	½ Lot Sample

TABLE E417.31–3—Continued

Percussion activated device primer charge lot acceptance tests [1]	Reference	Quantity
All-Fire [4]	E417.31(e)	Statistical Sample.

[1] These tests shall be performed at the component level on the percussion primer prior to installation.
[2] These tests shall be performed before and after the operating environment test.
[3] The all-fire impact is the specification value determined by the statistical all-fire impact series performed during qualification testing.
[4] Results from the lot acceptance all-fire test must demonstrate that the production lot is a representative sample of the all-fire baseline established during qualification testing performed in accordance with table E417.31–4.
[5] The lot sample shall consist of 10% of the lot or 30 units whichever is greater.

TABLE E417.31–4

Percussion activated device primer charge qualification tests	References	Quantity X=	
		Statistical Sample	105
Component Examination	Table E417.31–3	X	X
All-Fire	E417.31(e)	X	
Operating Environmental Test [1]	E417.11		
Thermal Cycling	E417.11(h)		X
Component Examination	E417.5		
Leakage	E417.5(h)		X
X-ray and N-ray	E417.5(f)		X
Firing Tests	E417.31(f)		
Ambient Temperature	E417.31(f)		
All-Fire Impact [2]	E417.31(f)		15
Operational Impact [3]	E417.31(f)		15
200% Operational Impact	E417.31(f)		5
High Temperature	E417.31(f)(4)		
All-Fire Impact [2]	E417.31(f)		15
Operational Impact [3]	E417.31(f)		15
200% Operational Impact	E417.31(f)		5
Low Temperature	E417.31(f)(5)		5
All-Fire Impact [2]	E417.31(f)		15
Operational Impact [3]	E417.31(f)		15
200% Operational Impact	E417.31(f)		5

[1] Environmental tests shall be performed at qualification test levels.
[2] All-fire is determined by the statistical all-fire impact series.
[3] Operational impact represents the impacted required by the performance specifications that will be delivered by the percussion activated device assembly. The operational impact is at least twice as great as the all-fire impact.

TABLE E417.31–5

Percussion activated device aging surveillance tests [1]	Reference	Quantity [3]	
		1 Year [4] X=5	3 Year [5] X=10
Component Examination:	E417.5		
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X
Leakage	E417.5(f)	X	X
X-ray and N-ray	E417.5(f)	X	X
Non-Operating Environmental Tests and	E417.9		
Operating Environmental Tests [2]	E417.11		
Thermal Cycling	E417.11(h)	X	X
High Temperature Storage	E417.9(c)		X
Shock	E417.11(e)	X	X
Random Vibration	E417.11(c)	X	X
Component Examination	E417.5		
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Firing Test	E417.31(d)		
High Temperature	E417.31(d)(3)	2	5
Low Temperature	E417.31(d)(4)	3	5

[1] These tests shall be performed at the percussion activated device assembly level.
[2] Environmental tests shall be performed at qualification levels.
[3] For each column, the quantity of sample components required at the top of the column shall be taken from the same production lot and shall be subjected to each test designated with an X. For a test designated with a lessor quantity, each component subjected to the test shall be selected from the original samples for that column.

[4] X shall be equal to five for tests to extend the service life of remaining percussion activated devices from the same lot for one year.
[5] X shall be equal to 10 for tests to extend the service life of remaining percussion activated devices from the same lot for three years.

(b) *Safety tests.* A percussion activated device shall be tested to ensure that it can be handled and operationally implemented safely. The following safety tests must be performed:

(1) *No-fire impact test.* Testing shall be performed to demonstrate that a percussion activated device will not fire when pulled with the guaranteed no-fire force. In addition, testing shall performed by pulling the maximum guaranteed no-fire pull force and then releasing the mechanism; the percussion activated device shall not fire and its performance must not be degraded. The percussion activated device primer initiation assembly shall not disengage inadvertently when pulled with the guaranteed no-fire force.

(2) *Pin locking test.* A percussion-activated device shall be tested to demonstrate the capability of the safing pin to withstand twice the worst-case pull force that can be experienced after installation on the vehicle. The percussion activated device shall be pulled at the all-fire pull-force with the safing pin installed. The percussion activated device firing assembly shall not move more than half the no-fire pull distance nor experience any mechanical anomalies. At a minimum, this test shall be performed using a 200-pound pull test.

(3) *Pin retention test.* A percussion-activated device shall be tested to demonstrate that its safing pin is not removable when a no-fire pull or greater force is applied to the percussion activated device lanyard. Testing must verify that the safing pin resists removal such that the no-fire pull pre-load can be detected when attempting to remove the pin with the pre-load applied. The force needed to remove the safing pin with the lanyard in an unloaded condition shall be quantified and verified as within its performance specification.

(c) *Status-of-health.* A percussion activated device shall be subjected to status-of-health tests performed in accordance with E417.3(g) to verify that each critical parameter is within its performance specification. These tests shall include validation of spring constant and firing pull distance at the subassembly level.

(d) *Percussion activated device firing tests.* A percussion activated device shall be tested at the specification pull-force to ensure it meets its performance specifications after being subjected to qualification stress conditions in accordance with the following:

(1) A percussion activated device shall be tested in a flight configuration using flight configured explosive transfer system lines on the output.

(2) A measurement technique, such as swell cap or dent block, shall be used to verify that the explosive transfer system output initiates according to its performance specification.

(3) High temperature firings shall be initiated at the qualification high temperature or a +71 °C workmanship level, whichever is higher.

(4) Low temperature firings shall be initiated at the qualification low temperature or a −54 °C workmanship level, whichever is lower.

(e) *All-fire energy level.* A statistical firing series shall be performed to determine that the primer will fire with a 0.999 at 95% confidence when subjected to an all-fire energy impact utilizing a flight configured firing pin.

(f) *Primer charge firing tests.* The primer charge shall be tested to ensure that it functions reliably after being subjected to operational firing conditions plus margin.

(1) The primer charge shall be tested in a flight configuration using a flight configured firing pin.

(2) Measurements shall be taken to verify that the output initiates within its performance specifications.

(3) A percussion activated device that incorporates booster charges or ordnance delays as an integral unit shall be tested to ensure that the performance is within its performance specification.

(4) High temperature firings shall be initiated at the qualification high temperature or a +71 °C workmanship level, whichever is higher.

(5) Low temperature firings shall be initiated at the qualification low temperature or a −54 °C workmanship level, whichever is lower.

E417.33 Explosive transfer system, ordnance manifold, and destruct charge.

(a) *General.* An explosive transfer system, ordnance manifold, or destruct charge that is part of a flight termination system shall be tested to demonstrate that it functions within its performance specifications when subjected to non-operating and operating environments. This testing shall be accomplished in accordance with the acceptance, qualification, and age surveillance test matrices and accompanying requirements of this section.

TABLE E417.33–1

Explosive transfer system, ordnance manifold and destruct charge acceptance tests	References	Quantity		
		Ordnance manifolds [3] [4]	Explosive transfer system [5]	Destruct charges
Component Examination	E417.5			
Visual Inspection	E417.5(b)	100%	100%	100%
Dimension	E417.5(c)	100%	100%	100%
Leakage	E417.5(h)	100%	100%	100%
X-ray and N-ray	E417.5(f)	100%	100%	100%
Non-operating and Operating Environments [1]	E417.9, E417.11			
Thermal Cycling	E417.11(h)	Lot Sample [6]	Lot Sample [6]	Lot Sample [6]
High Temperature Storage [2]	Lot Sample	Lot Sample	Lot Sample	
Shock	E417.11(e)	Lot Sample	Lot Sample	Lot Sample
Random Vibration	E417.11(c)	Lot Sample	Lot Sample	Lot Sample
Tensile Load	E417.9(j)		Lot Sample	Lot Sample
Component Examination	E417.5			
X-ray and N-ray	E417.5(f)	Lot Sample	Lot Sample	Lot Sample
Leakage	E417.5(h)	Lot Sample	Lot Sample	Lot Sample
Firing Test	E417.33(b)			
Ambient Temperature	E417.33(b)	⅓ Lot Sample	⅓ Lot Sample	⅓ Lot Sample
High Temperature	E417.33(b)(4)	⅓ Lot Sample	⅓ Lot Sample	⅓ Lot Sample
Low Temperature	E417.33(b)(5)	⅓ Lot Sample	⅓ Lot Sample	⅓ Lot Sample

[1] Tests shall be performed at qualification levels.
[2] This test is optional. If performed, the lot shall have an initial service life of five years. If not performed, the lot service life shall be one year.
[3] For inert manifolds, only visual inspection and dimension measurements are required.
[4] This column applies to manifolds that contain booster charges. All tests must be performed at the manifold level.
[5] The quantity specified is required for each configuration of explosive transfer line end-tip.
[6] The lot sample size shall be 10 percent of the lot, but not less than nine units from the lot.

TABLE E417.33–2

Destruct charge qualification tests	References	Quantity			
		X=5	X=2	X=1	X=21
Component Examination	E417.5				
Visual Inspection	E417.5(b)			X	X
Dimension	E417.5(c)			X	X
Leakage	E417.5(h)			X	X
X-ray and N-ray	E417.5(f)			X	X
Non-Operating Environment Tests and Operating Environment Tests [1].	E417.9, E417.11				
Storage Temperature	E417.9(b)				4
Transportation Shock	E417.9(d)				4
Bench Handling	E417.9(e)				4
Transportation Vibration	E417.9(f)				4
Fungus Resistance	E417.9(g)				4
Salt Fog	E417.9(h)				4
Fine Sand	E417.9(i)				4
Thermal Cycling	E417.11(h)				X
High Temperature Storage [2]	E417.9(c)				10
Humidity	E417.11(g)				4
Acceleration	E417.11(f)				X
Shock	E417.11(e)				X
Sinusoidal Vibration	E417.11(b)				X
Random Vibration	E417.11(c)				X
Handling Drop	E417.9(k)				X
Abnormal Drop	E417.9(l)			X	
Tensile Load	E417.9(j)				X
Component Examination	E417.5				
Leakage	E417.5(h)				X
X-ray and N-ray	E417.5(f)				X
Penetration Margin Test	E417.33(c)	X			
Propellant Detonation	E417.33(d)		X		
Firing Tests	E417.33(b)				
Ambient Temperature	E417.33(b)				7
High Temperature	E417.33(b)(4)				7
Low Temperature	E417.33(b)(5)				7

[1] If an explosive transfer system manifold is used, it shall be tested with its explosive transfer system assembly attached during all operating environment tests.

[2] This test is optional. If performed, the lot shall have an initial service life of five years. If not performed, the lot shall have an initial service life of one year.

TABLE E417.33–3

Explosive transfer system and ordnance manifolds qualification tests	References	Quantity [3 4]	
		X=1	X=21
Component Examination	E417.5	X	X
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Non-Operating Environment Test and Operating Environment Tests	E417.9, E417.11		
Storage Temperature	E417.9(b)		4
Transportation Shock	E417.9(d)		4
Bench Handling	E417.9(e)		4
Transportation Vibration	E417.9(f)		4
Fungus Resistance	E417.9(g)		4
Salt Fog	E417.9(h)		4
Fine Sand	E417.9(i)		4
Thermal Cycling	E417.11(h)		X
High Temperature Storage [1]	E417.9(c)		10
Humidity	E417.11(g)		4
Acceleration	E417.11(f)		X
Shock [2]	E417.11(e)		X
Sinusoidal Vibration [2]	E417.11(b)		X
Random Vibration [2]	E417.11(c)		X
Handling Drop	E417.9(k)		X
Abnormal Drop	E417.9(l)	X	
Tensile Load	E417.9(j)		X
Component Examination	E417.5		
Leakage	E417.5(h)		X
X-ray and N-ray	E417.5(f)		X

TABLE E417.33–3—Continued

Explosive transfer system and ordnance manifolds qualification tests	References	Quantity [3 4]	
		X=1	X=21
Firing Test	E417.33(b)	....	....
Ambient Temperature	E417.33(b)	....	7
High Temperature	E417.33(b)(4)	....	7
Low Temperature	E417.33(b)(5)	....	7

[1] This test is optional. If performed, the lot shall have an initial service life of five years. If not performed, the lot shall have an initial service life of one year.
[2] A dynamically equivalent test fixture that simulates each flight configured interface shall be tested with the explosive transfer system assembly attached during all operating environment tests.
[3] The number of test samples indicated applies to explosive transfer lines and explosive manifolds with internal ordnance.
[4] The quantity specified is required for each configuration of explosive transfer line end-tip.

TABLE E417.33–4

Explosive transfer system, explosive manifolds and destruct charge age surveillance tests [1]	References	Quantity [3]	
		1 year [4] X=5	5 years [5] X=10
Component Examination	E417.5		
Visual Inspection	E417.5(b)	X	X
Dimension	E417.5(c)	X	X
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Non-Operating Environment Test and Operating Environment Tests [2]	E417.9, E417.11	....	....
Thermal Cycling	E417.11(h)	X	X
High Temperature Storage	E417.9(c)	....	X
Shock	E417.11(e)	X	X
Random Vibration	E417.11(c)	X	X
Tensile load	E417.9(j)	X	X
Component Examination	E417.5	....	....
Leakage	E417.5(h)	X	X
X-ray and N-ray	E417.5(f)	X	X
Firing Tests	E417.33(b)	....	....
High Temperature	E417.33(b)(4)	2	5
Low Temperature	E417.33(b)(5)	3	5

[1] Explosive manifolds with internal ordnance are also required to meet this requirement. Internal ordnance used in these manifolds may be tested at the manifold assembly level or externally at the ordnance level.
[2] These tests shall be performed at the qualification level.
[3] The quantity specified is required for each configuration of explosive transfer line end-tip.
[4] X shall be equal to five for tests to extend the service life of remaining components from the same lot for one year
[5] X shall be equal to 10 for tests to extend the service life of remaining components from the same lot for five years.

(b) *Firing tests.* Each ordnance initiation and transfer component shall be tested to demonstrate that it satisfies its performance specifications after being subjected to all qualification stress conditions.

(1) The destruct charge shall be initiated against a witness plate to validate that the ordnance output is within its performance specifications. The performance specification value shall be consistent with the in-family ordnance output determined during qualification testing.

(2) A measurement technique, such as swell cap or dent block, shall be used to verify that the explosive transfer system output is within its performance specifications.

(3) Each explosive manifold containing ordnance must be initiated in a flight configuration with an explosive transfer system.

(4) High temperature firings shall be performed at the qualification high temperature or a +71 °C workmanship temperature, whichever is higher.

(5) Low temperature firings shall be performed at the qualification low temperature or a −54 °C workmanship temperature, whichever is lower.

(c) *Penetration margin.* Testing must demonstrate the capability of the destruct charge to meet the requirements of § 417.303(b), (d), and (e) with margin. Five destruct charges shall be tested to ensure they penetrate 150% of the target thickness. These tests shall also correlate equivalent penetration depth into a witness plate. This witness plate penetration depth will be used to develop a specification used for future tests as a status-of-health indication to determine out-of-family ordnance.

(d) *Propellant detonation.* Each destruct charge shall be tested to demonstrate that it will not detonate the propellant of its intended target.

E417.35 Shock and vibration isolator.

(a) *General.* A shock and vibration isolator that is part of a flight termination system shall be tested to demonstrate that it functions within its performance specifications when subjected to non-operating and operating environments. The results of the testing in this section shall be used to determine the component qualification and acceptance test levels for any component using isolators. This testing shall be accomplished in accordance with the acceptance and qualification test matrices and accompanying requirements of this section.

(1) *Component qualification and lot acceptance testing on isolators.* Each component mounted on one or more isolators must withstand all qualification environments introduced by isolator amplification and variability due to operating environments. Each of the following required tests may be performed separately or in combination with other tests:

(i) Component qualification testing must be performed using isolators that have undergone the testing of this section. The isolator screening test does not need to reflect a flight configuration but must demonstrate repeatable performance and workmanship.

(ii) Flight termination system components mounted on isolators must be subjected to qualification test environments that reflects the required predicted environments plus the required margins. This qualification test may be performed with the component on its isolators or hard-mounted.

(iii) Flight termination system components shall be subjected to a qualification workmanship screening random vibration test in accordance with E417.11(c)(3) and Table E417.11–1. This qualification test may be performed with the component on its isolators or hard-mounted.

(iv) Each flight termination system component and all component interface hardware such as connectors, cables, and grounding straps must demonstrate survivability in a flight-configured test using isolators. This test must use a flight configured isolator set-up subjected to the qualification operating environment.

(v) All qualification testing must account for variations in isolator performance due to operating environments. At a minimum, thermal effects and acceleration pre-load performance variability must be tested as part of the qualification test.

(2) *Component acceptance testing on isolators.* Any flight termination system component mounted on one ore more isolators must be subjected to acceptance test environments. Component acceptance testing must use the same configuration that was used during qualification testing whether on isolators or hard-mounted.

TABLE E417.35–1

Shock and vibration isolator acceptance test requirements	Reference	Quantity (percent)
Component Examination	E417.5	
Visual Inspection	E417.5(b)	100
Dimension	E417.5(c)	100
Performance Verification Tests	E417.3	
Load Deflection	E417.35(b)	100
Status-of-Health	E417.35(c)	100

(b) *Load deflection.* Testing shall be performed to determine the ability of the vibration isolator to withstand full-scale deflection expected in flight while maintaining its performance specifications and to provide status-of-health. Each isolator shall be subjected to varying increments from the null position to the full-scale flight deflection. Spring constant shall be measured at each increment and verified to be within its performance specification. Each isolator used for qualification testing shall be first tested in accordance with this paragraph; the values of the initial testing will be used for generating a specification value for future flight units.

(c) *Status-of-health.* A shock and vibration isolator shall be subjected to status-of-health tests performed in accordance with E417.3(g). Each isolator shall be subjected to a random vibration or sinusoidal sweep vibration input which generates amplitudes representative of the flight environment. This test must include the following:

(1) The natural frequency for each isolator shall be determined by subjecting the isolator to vibration at the flight environment amplitude and measuring the isolator's natural frequency. The natural frequency measured must be within the isolator's performance specification. All tolerances used in the performance specification shall be added to the qualification margins to ensure that the specification criteria are sufficiently bounded to maintain the required qualification test margins.

(2) The dynamic amplification value shall be determined for each isolator by subjecting the isolator to vibration at the flight environment amplitude and measuring the isolator's dynamic amplification. The dynamic amplification measured must be within the isolator's performance specification. All tolerances used in the performance specification shall be added to qualification margins to ensure that the specification criteria are sufficiently bounded to maintain the required qualification test margins.

E417.37 Electrical Connectors and Harnesses

(a) *General.* Each electrical connector or harness that is part of a flight termination system shall be tested to demonstrate that it functions in accordance with its performance specification when subjected to non-operating and operating environments. This matrix applies to cables and connectors that are part of a flight termination system but are not part of a flight termination system component. This testing shall be accomplished in accordance with the test matrices and accompanying requirements of this section.

(1) Cable and connector qualification testing shall be performed as part of the component-level qualification testing. Component qualification testing shall be conducted using a flight configured connector and harness connected to the worst-case flight tie-down point.

(2) Acceptance testing must be performed to ensure that each connector to be used for flight meets its performance specification and is free of workmanship defects.

TABLE E417–37–1

In-line and staging and component connectors	Reference	Quantity X=2
Non Operating Environments:	E417.9	
Salt Fog [1]	E417.9(h)	X
Status of Health	E417.37(b)	X
Operating Environments	E417.11	
Humidity [1]	E417.11(g)	X
Shock [2]	E417.11(e)	
Sinusoidal Vibration [2]	E417.11(b)	X
Random Vibration [2]	E417.11(c)	X
Status of Health	E417.37(b)	X

[1] Connector and cable pin to pin, and pin to case resistance shall be tested immediately after this testing is completed.
[2] Connector and cable continuity or component functioning shall be continuously monitored for dropouts at a resolution of one millisecond.

(b) *Harness status-of-heath.* Each harness shall be electrically tested utilizing all critical indicators necessary to ensure flight integrity.

(1) The dielectric withstanding voltage between mutually insulated portions of a component part shall be measured to demonstrate that the connector operates without degradation in performance at its rated voltage and withstands momentary over-potentials due to switching, surge, or any other similar phenomena.

(2) The isolation resistance between mutually insulated points shall be sufficient for ensuring the connector operates without degradation at its rated voltage. Insulation resistance shall be used as status-of-health indication to ensure that insulation material has not been damaged. Minimum workmanship level testing shall be performed to ensure that potentially damaged flight harnesses or wires, which could fail during nominal and abnormal flight conditions, are identified before launch.

(3) Insulation resistance between wire shields and conductors and connector pin to pin shall be tested to demonstrate the insulation's ability to withstand a minimum workmanship voltage of 500 VDC or 150% of the rated output voltage, whichever is greater. Wire and harness insulation resistance values shall be measured to demonstrate the connector meets its performance specification.

E417.39 Ordnance Interfaces and Manifold Qualification

(a) *General.* Each ordnance interface or manifold that is part of a flight termination system shall be tested to demonstrate that it satisfies a reliability of 0.999 at a 95% confidence level. The following apply to all interface testing:

(1) All tests shall utilize simulated flight configured interfaces. These tests shall be performed using test hardware that duplicates the geometry and volume of any closed firing systems.

(2) Testing must account for performance variability due to manufacturing and workmanship tolerances such as minimum gap, maximum gap, and axial and angular offset.

(b) *Detonation flier plate ordnance transfer systems.* A detonation flier plate ordnance transfer system is composed of components such as, electro-explosive devices, exploding bridgewires, ordnance delays, explosive transfer systems, destruct charges, and percussion activated devices. Such a system shall be tested to demonstrate its reliability using one of the following:

(1) Perform a statistical firing series that varies critical performance parameters, including gap and axial and angular alignment, to ensure that ordnance initiation occurs across each flight configured interface with a reliability of 0.999 at a 95% confidence level.

(2) Test 2994 flight units in a flight configuration to demonstrate that ordnance initiation occurs across each flight configured interface with a reliability of 0.999 at a 95% confidence level.

(3) Demonstrate a significant gap margin by performing the following:

(i) Test five units at four times the combined system gap.

(ii) Test five units at four times the combined system axial misalignment.

(iii) Test five units at four times the combined system angular misalignment.

(iv) Test five units at half the combined system gap.

(c) *Deflagration and pressure sensitive ordnance transfer systems.* A deflagration or pressure sensitive ordnance transfer system is composed of devices such as ordnance delays, electro explosive system low energy end-tips, and percussion activated device primers. Such a system shall be tested to demonstrate its reliability using one of the following:

(1) Perform a statistical firing series that varies critical performance parameters, including gap interface, to ensure that ordnance initiation occurs across each flight configured interface with a reliability of 0.999 at a 95% confidence level.

(2) Test 2994 flight units in a flight configuration to demonstrate that ordnance initiation occurs across each flight configured interface with a reliability of 0.999 at a 95% confidence level.

(3) Demonstrate a significant gap margin by performing the following:

(i) Test five units using a 75% downloaded donor charge across the maximum gap.

(ii) Test five units using a 120% overloaded donor charge across the minimum gap.

Appendix F to Part 417—Flight Termination System Electronic Piece Parts

F417.1 General

This appendix contains requirements that apply to electronic piece parts used in a flight termination system. A launch operator shall ensure the high reliability of all electronic piece parts used in the production of all flight termination system components by employing U.S. military-quality piece parts in accordance with F417.5 of this appendix or custom or non-military piece parts in accordance with F417.7 of this appendix.

F417.3 Piece Parts Program Plan

A launch operator shall describe its compliance with the requirements of this appendix in its flight termination system piece parts program plan prepared during the licensing process in accordance with § 415.119(o) of this chapter and updated for each launch in accordance with part 417. All electronic piece parts used in a flight termination system must successfully undergo derating, qualification, screening, lot acceptance testing, and lot destructive physical analysis in accordance with the launch operator's piece parts program plan and the requirements of this appendix. Any failure or out of family test results and a description of any corrective actions shall be submitted to the FAA for review and approval before the part, including any part from the same production lot, is installed in a flight termination system component. A launch operator's piece parts program must include a monthly review of information disseminated by the Government Industry Data Exchange Program (GIDEP) and must account for any GIDEP alerts related to the quality and reliability of piece parts used in a flight termination system component. GIDEP alert information is available at the GIDEP Internet Web page (www.gidep.corona.navy.mil).

F417.5 U.S. Military-Quality Piece Parts

(a) U.S. military-quality piece parts used in a flight termination system must meet the performance, quality, and reliability levels required by the Department of Defense product qualification program as they apply to the following parts and classifications:

(1) JANTX, JANTXV, or JANS classes for diodes and transistors.

(2) Class B or Class S for microcircuits.

(3) Class H or Class K for hybrids.

(4) Established reliability level R or S level for passive parts.

(5) Established reliability level R for relays.

(6) Class B for crystal oscillators or filters

(b) All internal cavity piece parts must undergo particle impact noise detection (PIND) testing in accordance with F417.7(b) of this appendix.

(c) The Defense Supply Center, Columbus (DSCC) Sourcing and Qualification Unit (DSCC–VQ) maintains lists of suppliers of U.S. military-quality parts with the classifications required by paragraph (a) of this section. When using U.S. military-quality parts, a launch operator shall select parts from a Qualified Manufacturers List (QML) or Qualified Product List (QPL), which are available at the DSCC–VQ Web page (www.dscc.dla.mil/offices/sourcing__and__qualifications).

F417.7 Custom or Non-Military Piece Parts

(a) All custom or non-military parts used in a flight termination system shall be subjected to screening tests, lot acceptance testing, qualification testing, and destructive physical analysis to demonstrate equivalence to the military-quality parts in F417.5 of this appendix. Each piece part must successfully undergo testing in accordance with the following:

(1) 100% of all parts shall be subjected to screening tests to detect any electrical or mechanical workmanship defects and infant mortality failure modes.

(2) Each part's mechanical and electrical design shall be qualified through sample qualification testing to confirm the ability of the part to operate without mechanical or electrical degradation. The quality of the manufacturing processes for each part shall be demonstrated through lot acceptance testing of production lot samples to confirm that the manufacturing process produces parts consistent with the part's qualified design. For qualification and lot acceptance testing, each sample piece part shall be subjected to mechanical, electrical, and environmental stress tests that demonstrate the part meets its performance specifications. Where applicable, a 1000-hour life test meets these requirements.

(3) As part of the lot acceptance testing, lot samples of each piece part must undergo a destructive physical analysis after those samples have been subjected to the environmental stress tests. The destructive physical analysis shall demonstrate that the part's design, materials, and processes are consistent with its specification and must detect any internal anomalies and defects that may occur during environmental testing that cannot be detected by other tests. The number of samples from each piece part production subjected to destructive physical analysis is dependent on the type of component and may vary from two to five samples. A description of any anomaly or defect and any corrective actions shall be

submitted to the FAA for review and approval of the test and before any part from the same production lot is installed in a flight termination system.

(b) All internal cavity piece parts must undergo particle impact noise detection (PIND) testing, unless they have external and internal pressure contacts (die to electrical contacts), optical coupled isolators, and double plug diodes. PIND testing must insure that applicable electronic parts are free of workmanship induced internal debris that could degrade the part's performance. If a production lot experiences a failure rate greater than one percent during PIND testing, additional PIND test runs shall be performed or the entire lot shall be rejected and not used in any flight termination system. If subsequent PIND test runs are made, the failure rates for each subsequent run must not increase from any previous run or the entire production lot shall be rejected. If the one-percent failure criterion is not met within five PIND test runs, the entire production lot shall be rejected. Any device from a production lot that failed PIND testing is not acceptable for use in a flight termination system and shall be marked accordingly.

(c) Each part shall be derated according to the launch operator's piece part program plan approved during the licensing process in accordance with § 415.119(o) of this chapter. A launch operator's derating criteria must ensure that the variability in electronic parts within a part production lot and the relationship between that variability and the variability of other parts used in the same flight termination system component will not result in a degradation of functional performance of the flight termination system. The stresses applied to a piece part during operation in its component circuit must be below the manufacturer's specified ratings for that piece part. The specifications that must be derated for each piece part include, but need not be limited to voltage, current, power, operating temperature range, and voltage or current over temperature.

(d) All piece parts shall be separately packaged and identified, including identification of the testing to which they have been subjected. Piece parts to be used for flight shall be subjected to life testing only. Piece parts that have been subjected to destructive testing shall not be used for flight.

Appendix G to Part 417—Natural and Triggered Lighting Flight Commit Criteria

G417.1 General

This appendix provides flight commit criteria to protect against natural lightning and lightning triggered by the flight of a launch vehicle. A launch operator shall implement these criteria in accordance with § 417.113(b) for any launch vehicle that utilizes a flight safety system. The launch operator shall employ any weather monitoring and measuring equipment and procedures needed to implement these flight commit criteria. These criteria cover a broad range of conditions, which apply to most launches at most launch sites; however there may be exceptions. A launch operator shall demonstrate to the FAA whether any of these criteria do not apply to a planned launch during the licensing process according to § 415.115(e) of this chapter.

G417.3 Definitions

For the purpose of this appendix:

Anvil means a stratiform or fibrous cloud produced by the upper level outflow or blow-off from thunderstorms or convective clouds.

Associated means that two or more clouds are causally related to the same weather disturbance or are physically connected. *Associated* is not synonymous with occurring at the same time. An example of clouds that are not associated is air mass clouds formed by surface heating in the absence of organized lifting. Also, a cumulus cloud formed locally and a physically separated cirrus layer generated by a distant source are not associated, even if they occur over or near the launch point at the same time.

Bright band means an enhancement of radar reflectivity caused by frozen hydrometeors falling through the 0 degree C level and beginning to melt.

Cloud edge means the location of the edge of a cloud determined visually where possible or by a 10–dBZ radar reflectivity measurement.

Cloud layer means a vertically continuous array of clouds, not necessarily of the same type (*e.g.* cumulus, anvil, debris, etc.), whose bases are approximately at the same level.

Cloud top means the altitude of the top of a cloud determined visually where possible or by a 10–dBZ radar reflectivity measurement.

Cumulonimbus cloud means any convective cloud with any part higher than any altitude where the temperature is −20 degrees Celsius.

Debris cloud means any cloud, except an anvil cloud, that has become detached from a parent cumulonimbus cloud or thunderstorm, or that results from the decay of a parent cumulonimbus cloud or thunderstorm.

Electric field measurement aloft means the magnitude of the instantaneous, vector, electric field (E) at a known position in the atmosphere, as measured by a suitably instrumented, calibrated, and located airborne-field-mill aircraft.

Electric field measurement at the surface of the Earth means the one-minute arithmetic average of the vertical electric field (Ez) at the ground measured by a ground based field mill. The polarity of the electric field is the same as that of the potential gradient; that is, the polarity of the field at the ground is the same as the dominant charge overhead. Electric field contours are used for the electric field measurement at the surface.

Field mill means a device used to measure the intensity of electric fields.

Flight path means the planned normal trajectory.

Moderate precipitation means a precipitation rate of 0.1 inches/hr or a radar reflectivity factor of 30 dBZ.

Nontransparent means sky cover through which forms are blurred, indistinct, or obscured, sky cover through which forms are seen distinctly only through breaks in the cloud cover, or clouds with a radar reflectivity of 10 dBZ or greater.

Optically thin means having a vertical optical thickness of unity or less at visible wavelengths.

Precipitation means detectable rain, snow, sleet, etc. at the ground, or virga, or a radar reflectivity greater than 18 dBZ at altitude.

Thunderstorm means any convective cloud that produces lightning.

Transparent means optically thin. Sky cover is transparent if other objects in the sky such as higher clouds, blue sky, stars, and the disk of the sun, can be distinctly seen from below, if the sun casts distinct shadows of objects on the ground, or if objects on the ground such as terrain, buildings, and lights can be distinctly seen from above.

Weather disturbance means a weather system where dynamical processes destabilize the air on a scale larger than the individual clouds or cells. Examples of disturbances are fronts, troughs and squall lines.

Within means a function word that specifies a margin in all directions (horizontal, vertical, and slant separation) between the cloud edge or top and the flight path. For example, ''*within* 10 nautical miles of a thunderstorm cloud'' means that there must be a 10 nautical mile margin between the closest part, whether cloud edge or cloud top, of a thunderstorm cloud and the flight path.

G417.5 Lightning

(a) A launch operator shall not initiate flight for 30 minutes after any type of lightning occurs in a thunderstorm if the flight path will carry the launch vehicle within 10 nautical miles of that thunderstorm.

(b) A launch operator shall not initiate flight for 30 minutes after any type of lightning occurs within 10 nautical miles of the flight path unless:

(1) The cloud that produced the lightning moves beyond 10 nautical miles of the flight path;

(2) There is at least one working field mill within five nautical miles of each such lightning flash; and (3) The absolute values of all electric field measurements at the Earth's surface within five nautical miles of the flight path and measurements made by each field mill employed according to paragraph (b)(2) of this section are less than 1000 Volts/meter for 15 minutes.

G417.7 Cumulus Clouds

(a) The criteria in this section apply to cumulus clouds. This section does not apply to altocumulus, cirrocumulus, or stratocumulus clouds.

(b) A launch operator shall not initiate flight if the flight path will carry the vehicle within 10 nautical miles of any cumulus cloud with a cloud top higher than any altitude where the temperature is (20 degrees Celsius.

(c) A launch operator shall not initiate flight if the flight path will carry the vehicle within five nautical miles of any cumulus cloud with a cloud top higher than any altitude where the temperature is (10 degrees Celsius.

(d) A launch operator shall not initiate flight if the flight path will carry the launch vehicle through any cumulus cloud with a cloud top higher than any altitude where the temperature is (5 degrees Celsius.

(e) A launch operator shall not initiate flight if the flight path will carry the launch vehicle through any cumulus cloud with a cloud top at an altitude that is between any altitude where the temperature is +5 degrees Celsius and any altitude where the temperature is (5 degrees Celsius unless:

(1) The cloud is not producing precipitation;

(2) The horizontal distance from the center of the cloud top to at least one working field mill is less than two nautical miles; and (3) All electric field measurements at the Earth's surface within 5 nautical miles of the flight path and the measurements made at each field mill employed according to paragraph (d)(2) of this section have been between minus 100 Volts/meter and plus 500 Volts/meter for 15 minutes.

G417.9 Attached Anvil Clouds

(a) A launch operator shall not initiate flight if the flight path will carry the vehicle through nontransparent parts of any attached anvil cloud.

(b) A launch operator shall not launch if the flight path will carry the vehicle within five nautical miles of a nontransparent part of any attached anvil cloud for the first three hours after the last lightning discharge from the parent cloud or anvil cloud.

(c) A launch operator shall not launch if the flight path will carry the launch vehicle within 10 nautical miles of a nontransparent part of any attached anvil cloud for the first 30 minutes after the last lightning discharge from the parent cloud or anvil cloud.

G417.11 Detached Anvil Clouds

(a) A launch operator shall not initiate flight if the flight path will carry the launch vehicle through a nontransparent part of any detached anvil cloud for the first three hours after the anvil cloud is observed to be detached from the parent cloud.

(b) A launch operator shall not initiate flight if the flight path will carry the launch vehicle through a nontransparent part of a detached anvil cloud for the first four hours after the last lightning discharge from the detached anvil cloud.

(c) A launch operator shall not initiate flight if the flight path will carry the vehicle within five nautical miles of a nontransparent part of a detached anvil cloud for the first three hours after the last lightning discharge from the parent cloud or anvil cloud before detachment or after any lighting discharge from the detached anvil cloud unless:

(1) There is at least one working field mill within five nautical miles of the detached anvil cloud;

(2) The absolute values of all electric field measurements at Earth's surface within five nautical miles of the flight path and measurements made at each mill employed according to paragraph (c)(1) of this section have been less than 1000 Volts/meter for 15 minutes; and

(3) The maximum radar return from any part of the detached anvil cloud within five nautical miles of the flight path has measured less than 10 dBZ for 15 minutes.

(d) A launch operator shall not initiate flight if the flight path will carry the vehicle within 10 nautical miles of a nontransparent part of a detached anvil cloud for the first 30 minutes after the last lightning discharge from the parent cloud or anvil cloud before detachment or after any lighting discharge from the detached anvil cloud.

G417.13 Debris Clouds

(a) A launch operator shall not initiate flight if the flight path will carry the launch vehicle through any nontransparent part of a debris cloud during the three-hour period that begins at the time when the debris cloud is observed to be detached from the parent cloud or when the debris cloud is observed to have formed from the decay of the parent cloud top below any altitude where the temperature is −10 degrees Celsius. The three-hour period must begin anew at the time of any lightning discharge from the debris cloud.

(b) A launch operator shall not initiate flight if the flight path will carry the launch vehicle within five nautical miles of any nontransparent part of a debris cloud during the three-hour period defined by paragraph (a) of this section, unless:

(1) There is at least one working field mill within five nautical miles of the debris cloud;

(2) The absolute values of all electric field measurements at the Earth's surface within five nautical miles of the flight path and measurements at each field mill employed according to paragraph (b)(1) of this section have been less than 1000 Volts/meter for 15 minutes; and

(3) The maximum radar return from any part of the debris cloud within five nautical miles of the flight path has measured less than 10 dBZ for 15 minutes.

(c) A launch operator shall not consider a detached anvil cloud to be a debris cloud. The criteria in this section do not apply to detached anvil clouds. Criteria applicable to detached anvil clouds are provided in G417.11 of this appendix.

G417.15 Disturbed Weather

A launch operator shall not initiate flight if the flight path will carry the launch vehicle through any nontransparent cloud associated with a weather disturbance having clouds with cloud tops at or higher than any altitude where the temperature is 0 degrees Celsius and where the clouds contain moderate or greater precipitation or where there is evidence of melting precipitation in the clouds (such as, a radar bright band) within 5 nautical miles of the flight path.

G417.17 Thick Cloud Layers

(a) Except as noted in paragraph (b) of this section, a launch operator shall not initiate flight if the flight path will carry the vehicle through any nontransparent part of a cloud layer that is:

(1) Greater than 4,500 ft thick and any part of the cloud layer along the flight path is located between any altitude where the temperature is 0 degrees Celsius and any altitude where the temperature is −20 degrees Celsius; or

(2) Connected to a cloud layer that, within five nautical miles of the flight path, is greater than 4,500 ft thick and has any part located between any altitude where the temperature is 0 degrees Celsius and any altitude where the temperature is −20 degrees Celsius.

(b) A launch operator shall apply the flight commit criteria in paragraph (a) of this section to flying through a cloud layer unless the cloud layer is a cirriform cloud that has never been associated with convective clouds, is located entirely at altitudes where the temperatures are −15 degree Celsius or colder, and the cloud layer shows no evidence of containing liquid water.

G417.19 Smoke Plumes

A launch operator shall not initiate flight if the flight path will carry the launch vehicle through any cumulus cloud that has developed from a smoke plume from a fire while the cloud is attached to the smoke plume, or for the first 60 minutes after the cumulus cloud is observed to have detached from the smoke plume. Cumulus clouds that have formed above a fire but have been detached from the smoke plume for more than 60 minutes come under the requirements for cumulus clouds of G417.7 of this appendix.

G417.21 Surface Electric Fields

(a) A launch operator shall not initiate flight for 15 minutes after the absolute value of any electric field measurement at the Earth's surface within five nautical miles of the flight path has been greater than 1500 Volts/meter.

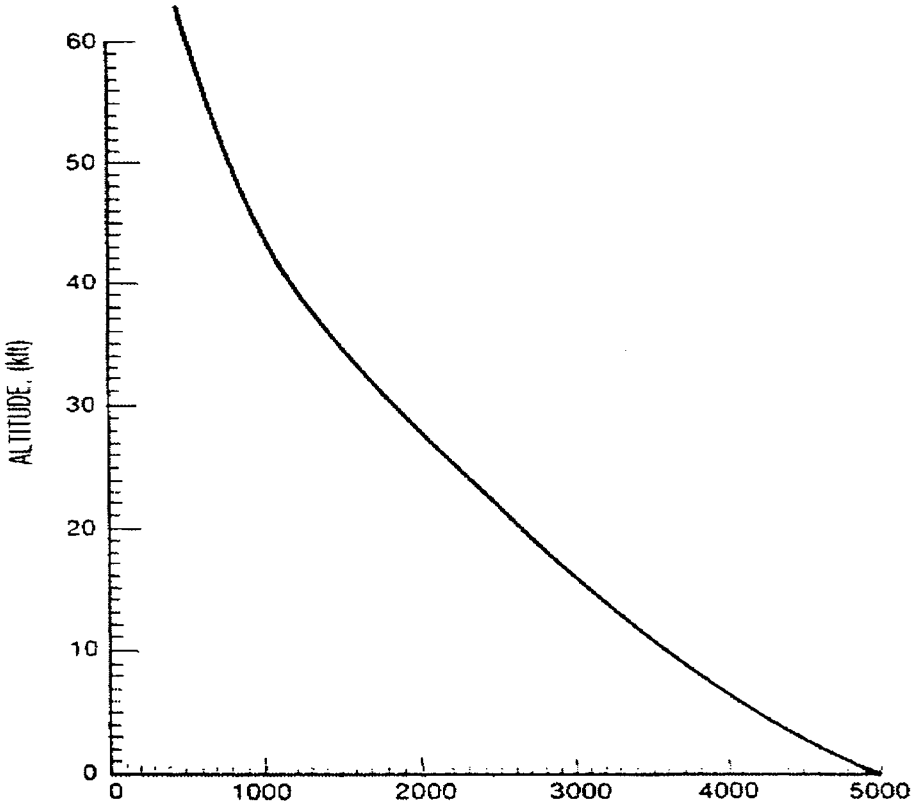
(b) A launch operator shall not initiate flight for 15 minutes after the absolute value of any electric field measurement at the Earth's surface within five nautical miles of the flight path has been greater than 1000 Volts/meter unless:

(1) All clouds within 10 nautical miles of the flight path are transparent; or

(2) All nontransparent clouds within 10 nautical miles of the flight path have cloud tops below any altitude where the temperature is +5 degrees Celsius and have not been part of convective clouds that have cloud tops higher than any altitude where the temperature is −10 degrees Celsius within the last three hours.

G417.23 Electric Fields Aloft

A launch operator need not apply the flight commit criteria in G417.9, G417.11, G417.13, G417.15, G417.17, G417.19, and G417.21(b) of this appendix if, during the 15 minutes prior to flight, the instantaneous electric field aloft, throughout the volume of air expected to be along the flight path, does not exceed the electric field values shown as a function of altitude in figure G417–1.



Volts/meter

Figure G417-1, Instantaneous Critical Electric Field, Volts/meter vs. Altitude.

G417.25 Triboelectrification

(a) A launch operator shall not initiate flight if a launch vehicle has not been treated for surface electrification and the flight path will go through any clouds above any altitude where the temperature is −10 degree Celsius up to the altitude at which the vehicle's velocity exceeds 3000 feet/second.

(b) A launch vehicle is ''treated'' for surface electrification if:

(1) All surfaces of the vehicle susceptible to precipitation particle impact are such that:

(i) The surface resistivity is less than 10^9 ohms/square; and

(ii) All conductors on surfaces (including dielectric surfaces that have been treated with conductive coatings) are bonded to the vehicle by a resistance that is less than 10^5 ohms; or

(2) A launch operator demonstrates by test or analysis that electrostatic discharges (ESD) on the surface of the vehicle caused by triboelectrification by precipitation particle impact will not be hazardous to the launch vehicle or the mission.

Appendix H to Part 417—Safety Critical Computing Systems and Software

H417.1 General

This appendix provides safety requirements for all flight and ground systems where computing systems perform or potentially perform any software safety critical function as defined in H417.3 of this appendix. A launch operator shall ensure that any computing system that has a software safety critical function is in accordance with this appendix.

H417.3 Software Safety Critical Functions

(a) A launch operator shall identify all software safety critical functions associated with its computing systems and software. This includes any function that, if not performed, if performed out of sequence, or if performed incorrectly, may directly or indirectly cause a public safety hazard. For each software safety critical function, a launch operator shall define the boundaries of the associated system or software.

(b) Software safety critical functions must include, but need not be limited to the following:

(1) Software used to control or monitor the functioning of safety critical hardware.

(2) Software used to or having the capability to monitor or control hazardous systems.

(3) Software associated with fault detection of safety critical hardware or software. A software fault is defined as the manifestation of an error in software. The term fault detection includes software associated with fault signal transmission.

(4) Software that responds to the detection of a safety critical fault.

(5) Any software that is part of a launch operator's flight safety system.

(6) Processor-interrupt software associated with any other software that has a software safety critical function.

(7) Any software used to compute real-time safety critical data used in any other software that has a software safety critical function.

H417.5 Central Processing Units and Firmware

(a) A launch operator shall ensure that a central processing unit's functionality is validated for its intended use and environment. Such validation must include testing under intended operational conditions and environments. This testing may be conducted incrementally such that each environmental factor is accounted for individually.

(b) A central processing unit's throughput must not exceed 80 percent of its total capacity.

(c) A central processing unit must have separate instruction and data memories and busses or separate program memory and data memory through memory protection hardware, segment protection, or page protection.

(d) Software safety critical function flight architecture must protect against a central processing unit single event upset at altitudes of 30,000 feet and above. The system must accomplish this through redundancy, error correcting memory, or voting between parallel central processing units.

(e) Firmware design and installation procedures must account for expected handling, electrostatic discharge, and storage environments to prevent firmware damage. A launch operator shall ensure the expected environments are not exceeded.

H417.7 Computing System Power

(a) A computing system must power up in a safe state.

(b) A computing system must not enter an unsafe or hazardous state after an intermittent power transient or fluctuation.

(c) In the event of a total power loss, a computing system must degrade in a controlled manner to a secondary mode of operations or shutdown without creating any potentially unsafe state.

H417.9 Failure Detection

(a) A computing system with a software safety critical function must incorporate an initialization test that verifies the following:

(1) The system is in a safe state and functioning properly prior to initiation of hazardous activities.

(2) Continuity and proper functioning of software safety critical function circuits, components, inhibits, interlocks, exception limits, and safing logic are tested to ensure safety operation.

(3) Memory integrity.

(4) Program loads.

(b) A computing system with a software safety critical function must periodically verify the following:

(1) Safety critical hardware and software safety critical functions, including any safety data transmission are operating correctly.

(2) Any safety data transmission has not been corrupted.

(3) The validity of real-time software safety critical function data.

(c) Any software must be capable of detecting the following input or output errors:

(1) Improper entries.

(2) Improper sequences of entries.

(3) Improper sequences of operations.

(4) Invalid output.

(5) Timing.

H417.11 Failure Response

(a) If a failure or error is detected within any system with a software safety critical function the system must:

(1) Revert to a safe state.

(2) Provide provisions for safing hardware subsystems under the control of software.

(3) Reject erroneous input.

(4) Ensure the logging of all detected software safety critical function related system errors.

(5) Notify the operator if any ARM and SAFE logic error pattern, other than the ARM and SAFE codes, is present.

(6) Initiate an anomaly alert:

(i) Anomalies must be prioritized; for example, warning/caution/advisory.

(ii) Anomalies of the same priority must be grouped together; for example, all warnings displayed first, cautions next, and advisories last.

(iii) The most recent anomaly must be displayed at the top of the priority subgroup.

(iv) The display must support reporting multiple anomalies. Details of each anomaly may be accessed with a single action; in other words, expand each anomaly summary into a write-up that delineates actions automatically taken and recommended actions for the operator to take.

(v) The display must differentiate between read and unread anomaly alerts.

(vi) All anomaly alerts must be cleared after predefined operator input. Such inputs must provide feedback of the corrective actions taken and confirm corrective action states.

(b) If a failure or error is detected within a flight safety system software safety critical function or associated safety critical hardware, the system must:

(1) Maintain the flight safety system in an ARMED state throughout the flight even if errors are detected.

(2) Reject erroneous input.

(3) Ensure all detected software safety critical function flight safety system related errors are transmitted via telemetry to the range.

(4) Notify the operator if any ARM or SAFE logic pattern other than the ARM or SAFE code is present.

H417.13 Testing and Maintenance

(a) If any non-operational hardware, such as test sets and simulators, or software is required for testing or maintenance of a system, the design of the system must ensure that identification of such equipment is fail-safe.

(b) The system identification must prevent operational hardware or software from being inadvertently identified as non-operational.

(c) A system with a software safety critical function must include one or more interlocks as needed to mitigate all hazards when performing maintenance or testing of the system.

(1) The system must prevent any interlock from being inadvertently overridden.

(2) When an interlock is overridden, disabled, removed, or bypassed to perform tests, the following apply:

(i) The interlock must not be left in an overridden state once the system is restored to operational use.

(ii) The interlock must not be autonomously controlled by a computing system.

(iii) The system must display the status of all interlocks on the operator console.

(iv) The system must verify the restoration of all interlocks prior to resuming any operation where the interlocks are needed to mitigate a hazard.

H417.15 Electromagnetic Interference and Electrostatic Discharge

Any computer system with a software safety critical function must provide protection against the harmful effects from electromagnetic radiation, or electrostatic discharge for the sensitive components of the computer system.

H417.17 Operator Console

(a) The design of an operator console must provide for the operator to cancel current processing with a single action and have the system revert to a known safe state. This action may consist of pressing two keys at the same time. For a flight safety system the in-flight safe state may be in a SAFE or ARMED mode.

(b) The design of an operator console must provide for the operator to exit potentially unsafe states to a known safe state with a single action. This action may consist of pressing two keys at the same time.

(c) Two or more unique operator actions must be required to initiate any potentially hazardous function or sequence of functions.

(d) The design of operator actions at an operator console must minimize the potential for inadvertent actuation.

(e) Operator displays, legends, and other interactions must be clear, concise, and unambiguous.

(f) Any operator console software must provide positive confirmation of valid data entry or actions taken; for example, the system must provide visual and/or aural feedback to the operator so the operator knows that the system has accepted the action and is processing it.

(g) An operator console must provide feedback for any software safety critical function actions not executed.

(h) An operator console must provide a real-time indication that it is functioning.

(i) For real-time processing functions requiring several seconds or longer, the system must provide a status indicator to the operator during processing. The indication must confirm that the commanded action has occurred and not just that the command was sent thus providing the operator with a closed-loop indication. This indication process must not interfere with the immediate performance of any other functions.

(j) The system must incorporate multiple devices and logical paths as needed to ensure that a single failure or error cannot prevent the operator from taking safing actions.

(k) The system must provide error messages that distinguish safety critical states or errors from non-safety critical states or errors.

H417.19 Software Development Process

(a) A launch operator shall ensure that desk audits, independent peer reviews, static analysis, and dynamic analysis tools and techniques are used to verify implementation of software safety critical function design requirements in any source code or system.

(b) A launch operator shall ensure that reviews of software source code are conducted to ensure that the code and comment lines within the code agree.

(c) Safety critical software function software must not incorporate any object code patches.

H417.21 Timers

(a) A system with a software safety critical function must incorporate watchdog timers or similar devices to ensure that the microprocessor or computer is operating properly.

(b) The design of a watchdog timer or similar device must prohibit software from entering an inner loop and resetting the timer or similar device as part of that loop sequence.

(c) The computer must control all software safety critical function timing functions.

(d) Software safety critical function timing values must not be modifiable by the operator from an operator console.

(e) Software safety critical function timer values and their applicability for their intended function shall be verified.

H417.23 Modular Code

(a) Software safety critical function software design and code must be modular.

(b) A launch operator shall ensure that the number of software safety critical function program modules is minimized within the constraints of operational effectiveness, computer resources, and good software design practices.

(c) Software safety critical function program modules must have no greater than one entry and one exit point.

H417.25 Loops

(a) A software safety critical function program loop must not exceed a predefined constant maximum execution time.

(b) The design of a feedback loop must ensure that the software cannot cause a runaway condition due to the failure of a feedback sensor.

(c) Branching into a software safety critical function program loop shall be prohibited.

(d) A branch out of a software safety critical function program loop must lead to a single exit point placed after the loop within the same module.

H417.27 Object Code

(a) Operational software safety critical function object code must not incorporate any STOP instruction.

(b) Non-executive operational software safety critical function object code must not incorporate a HALT instruction.

(c) After a task has been HALTED, the executive must restart central processing unit task processing no later than the start of the next computing frame.

(d) WAIT instructions may be used where necessary to synchronize input/output where appropriate handshake signals are not available.

(e) The design of a system must prevent unauthorized or inadvertent access to or modification of software safety critical function source code or assembly software or object code.

(f) The design of a system must prevent self-modification of the software safety critical function object code.

(g) Software safety critical function operational program loads must not contain unused executable codes.

(h) A software safety critical function operational program load must not contain any unreferenced variables.

H417.29 Data

(a) Each variable used in software safety critical function program code must be explicitly defined.

(b) A software safety critical function must not employ a logic ''1'' and ''0'' to denote any potentially hazardous state including any SAFE and ARM.

(c) Any ARM and SAFE states must be represented by at least a unique 4-bit pattern.

(d) A SAFE-state must be a pattern that cannot represent the ARM-state pattern as a result of a 1 or 2-bit error.

H417.31 Interfaces

(a) A launch operator shall ensure that the requirements in this section are applied to any software safety critical function interface between central processing units and any hardware input and output devices.

(b) A launch operator shall ensure that parity checks, checksums, cycle redundancy checks, or other data verification techniques are used to verify correct data transfer.

(c) Data transfer messages must be of a predetermined format and content.

(d) Limit and reasonableness checks must be performed on all software safety critical function inputs and outputs.

(e) Functions requiring two or more software safety critical function signals, such as ARM and FIRE, must not receive all of the necessary signals from a single register or input/output port.

(f) A function requiring two or more software safety critical function signals, such as ARM and FIRE, must not be generated by a single software module.

H417.33 Logic

(a) Software safety critical function conditional statements must have all required conditions satisfied; there must not be a potential for invalidated data input to the conditional statement.

(b) Decision statements in software safety critical function must not rely on inputs of all 1s or 0s, particularly when this information is obtained from external sensors.

(c) Flags and variable names must be unique and have a single purpose.

(d) Files must be unique and have a single purpose.

(e) Scratch files must not be used for storing or transferring software safety critical function information, data, or control functions between processes.

(f) Software must contain only those features and capabilities required by the system. Software safety critical function programs must not contain undocumented or unnecessary features.

(g) Indirect addressing methods must not be used unless the address is verified as being within acceptable limits prior to execution of software safety critical function operations. The compiled code must check the address boundary of any data written to arrays in software safety critical function operations.

(h) The accuracy of results of a software safety critical function program must not be dependent on the time taken to execute the program or time at which execution is initiated.

(i) The design of software safety critical function software must ensure that the full scale and zero representations of the software are fully compatible with the scales of any digital-to-analog, analog-to-digital, digital-to-synchro, or synchro-to-digital converters used in the system.

(j) Software safety critical function code must not incorporate one-to-one assignment statements.

H417.35 Memory

(a) All ground or preflight process static memory not used for or by the operational program must be initiated to a pattern that causes the system to revert to a safe state if executed.

(b) All flight processor static memory not used for or by the operational program must be initiated to a pattern that will cause the system to revert to a predefined state if executed. This predefined state must not stop a central processing unit from operating. For a flight safety system, reverting to a predefined state must not change the operating mode; for example, ARMED must not be SAFED.

(c) Dynamic memory usage must not exceed 85 percent. This assumes average memory usage; however, a launch operator shall verify memory usage by testing against the projected worst case to ensure protection from memory saturation as a result of memory leakage.

(d) Random numbers, HALT, STOP, WAIT, or NO-OPERATION instructions must not fill processing memory.

(e) Data or code from previous overlays or loads must not be allowed to remain.

(f) An overlay of software safety critical function software must occupy the same amount of memory.

(g) Safety kernels must be resident in nonvolatile read only memory or in protected memory that cannot be overridden by the computing system.

H417.37 Configuration Control

(a) A launch operator shall ensure that configuration control is established as soon as a software baseline is established.

(b) A launch operator shall establish a software configuration control board to approve changes to configuration controlled software prior to their implementation.

(c) A member from the system safety engineering team shall be a member of the software configuration control board and tasked with the evaluation of all software changes for their potential safety impact.

(d) A member of the hardware configuration control board shall be a member of the software configuration control board and vice versa to keep members apprised of hardware/software changes and to ensure that hardware/ software changes do not conflict with or introduce potential safety hazards due to hardware/software incompatibilities.

(e) A launch operator shall ensure that all software changes are coded into the source code, compiled, and tested prior to being introduced into operational equipment.

(f) A launch operator shall ensure that all firmware changes are issued as a fully functional and tested circuit card.

(g) A launch operator shall ensure the following requirements are applied to electrically erasable programmable read only memory:

(1) Electrically erasable programmable read only memory changes must pass hardware/ software functionality testing on like hardware prior to installation onto the system.

(2) Electrically erasable programmable read only memory changes must contain an embedded version identification number and be validated via checksum.

(h) A launch operator shall ensure that all software safety critical function software and associated interfaces are under configuration control.

H417.39 Software Analyses

(a) A launch operator shall ensure that internal independent validation and verification or a similar formal process is used to ensure safety design requirements have been correctly and completely implemented for software safety critical function code.

(b) A launch operator shall ensure that any conditional statements are analyzed to ensure that the conditions are correct for the task and that all potential conditions are satisfied and not left to a default condition.

(c) Comment statements must describe the functionality of the code.

(d) A launch operator shall ensure that all test results are analyzed to identify potential safety anomalies that may occur. A launch operator shall ensure that all hazards are investigated from a system level with hardware and software components.

H417.41 Software Testing

(a) A launch operator shall ensure that software safety critical function software testing includes the following:

(1) GO/NO–GO path testing (functioning properly/not functioning properly).

(2) Reaction of software to system (hardware, software, or combination of hardware and software) errors or failures.

(3) Boundary conditions (in, out, crossing).

(4) Input values of zero, zero crossing, and approaching zero from either direction.

(5) Minimum and maximum input data rates in worst case configurations.

(6) Regression testing for changes to software safety critical function software code.

(7) Operator interface/human errors during software safety critical function operations.

(8) Error handling.

(9) Any special features such as a kernel upon which the protection of software safety critical function features is based.

(10) Formal Test coverage for software testing to include analysis and documentation.

(b) A launch operator shall document and maintain test results in test reports.

H417.43 Software Reuse

(a) A launch operator shall ensure that any reused baseline software is evaluated to determine if it supports a software safety critical function in accordance with H417.3 of appendix H.

(b) A launch operator shall ensure that any software safety critical function reused baseline software is analyzed for the following:

(1) Correctness of new or existing system design assumptions and requirements.

(2) Replaced or new hardware that the software runs on or interfaces with.

(3) Changes in environmental or operational assumptions.

(4) Impact to existing hazards.

(5) Introduction of new hazards.

(6) Correctness of interfaces between system hardware, other software and the operator.

(c) A launch operator shall ensure that any unused or unneeded functionality in software safety critical function reuse baseline software is eliminated.

(d) A launch operator shall ensure that any software safety critical function reused baseline software changes in system design, environment, or operation assumptions are requalified or revalidated.

(e) A launch operator shall ensure that any software safety critical function reuse baseline software compiled with a different compiler is analyzed and tested.

H417.45 Commercial Off-the-Shelf Software

(a) When employing commercial-off-the shelf software, a launch operator shall ensure that every software safety critical function that the software supports is identified and satisfies the requirements of this appendix.

(b) A launch operator shall ensure that software safety hazard analyses is performed on all software safety critical commercial-off-the-shelf software to verify such software satisfies the requirements of this appendix.

H417.47 Language Compilers

(a) A launch operator shall ensure that only production qualified higher order language compilers are used for software safety critical function code.

(b) A launch operator shall ensure that no beta test versions of higher order language compilers are used for software safety critical function code.

(c) A launch operator shall ensure that the heritage of each language and compiler used for software safety critical function code is clearly identified for each portion of the system design.

(d) A launch operator shall ensure that translation routines and hardware between languages used in software safety critical functions are analyzed and tested.

(e) A launch operator shall ensure that any non-standard languages, those languages without production qualified compilers, used in software safety critical functions are analyzed and tested.

(f) A launch operator shall ensure that any programs or routines, compiled from different compiler versions, supporting software safety critical functions are analyzed and tested.

(g) A launch operator shall not use a programmable logic controller in a software safety critical function system unless its use is specifically approved by the FAA as part of the licensing process and the following is documented in the software development plan:

(1) The process to preclude hazardous or erroneous logic development.

(2) The process to preclude erroneous logic entry into the programmable logic controller.

(3) The validation process to ensure proper program operation to be accomplished with the system in a non-hazardous state.

Appendix I to Part 417—Methodologies for Toxic Release Hazard Analysis

I417.1 General

This appendix provides methodologies for performing toxic release hazard analysis for the flight of a launch vehicle as required by § 417.229 and for launch processing at a launch site in the United States as required by § 417.407(f).

I417.3 Identification of Non-Toxic and Toxic Propellants

(a) *General.* A launch operator's toxic release hazard analysis for launch vehicle flight (I417.5) and for launch processing (I417.7) must identify all propellants used for each launch and identify whether each propellant is toxic or non-toxic in accordance with the requirements of this section.

(b) *Non-toxic exclusion.* A launch operator need not conduct a toxic release hazard analysis in accordance with the requirements of this appendix for flight or launch processing if its launch vehicle, including all launch vehicle components and payloads, uses only those propellants listed in Table I417–1.

TABLE I1417–1.—COMMONLY USED NON-TOXIC PROPELLANTS

Item	Chemical name	Formula
1	Liquid Hydrogen	H_2
2	Liquid Oxygen	O_2
3	Kerosene (RP–1)	$CH_{1.96}$

(c) *Identification of toxic propellants.* A launch operator's toxic release hazard analysis for flight and for launch processing must identify all toxic propellants used for each launch, including all toxic propellants on all launch vehicle components and payloads. Table I417–2 lists commonly used toxic propellants and the associated toxic concentration thresholds used by the federal launch ranges for controlling potential public exposure. The toxic concentration thresholds contained in Table I417–2 are peak exposure concentrations in parts per million (ppm). A launch operator shall perform a toxic release hazard analysis to ensure that the public is not exposed to concentrations above the toxic concentration thresholds for each toxicant involved in a launch. A launch operator shall use the toxic concentration thresholds contained in table I417–2 for those propellants unless the launch operator demonstrates, clearly and convincingly through the licensing process, that another concentration is applicable to the launch and public exposure to the proposed concentration will not produce a casualty. Any propellant not identified in table I417–1 or table I417–2 falls into the category of unique or uncommon propellants, such as those identified in table I417–3, which are toxic or produce toxic combustion by-products. Table I417.3 is not an exhaustive list of possible toxic propellants and combustion by-products. For a launch that uses any propellant listed in table I417–3 or any other unique propellant not listed, a launch operator shall identify the chemical composition of the propellant and all combustion by-products and the release scenarios. A launch operator shall determine the toxic concentration threshold in ppm for any uncommon toxic propellant or combustion by-product in accordance with the following:

(1) For a toxicant that has a Level of Concern (LOC) established by the U.S. Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), or Department of Transportation (DOT), a launch operator shall use the LOC as the toxic concentration threshold for the toxic release hazard analysis except as required by paragraph (c)(2) of this section.

(2) If an EPA Acute Emergency Guidance Level (AEGL) exists for a toxicant and is more conservative than the LOC (that is, lower after reduction for duration of exposure), a launch operator shall use the AEGL in place of the LOC as the toxic concentration threshold.

(3) A launch operator shall use the EPA's Hazard Quotient/Hazard Index (HQ/HI) formulation to determine the toxic concentration threshold for mixtures of two or more toxicants.

(4) If a launch operator must determine a toxic concentration threshold for a toxicant for which an LOC has not been established, the launch operator shall clearly and convincingly demonstrate through the licensing process that public exposure at the proposed toxic concentration threshold will not cause a casualty.

TABLE I417–2.—COMMONLY USED TOXIC PROPELLANTS

Chemical name	Formula	Toxic concentration threshold (ppm)
Nitrogen Tetroxide	N_2O_4	4
Mixed Oxides of Nitrogen (MON)	NO, NO_2, N_2O_4	4
Nitric Acid	HNO_3	4
Hydrazine	N_2H_4	8
Monomethylhydrazine (MMH)	CH_3NHNH_2	5
Unsymmetrical Dimethylhydrazine (UDMH)	$(CH_3)_2NNH_2$	5
Ammonium Perchlorate/Aluminum	NH_3ClO_4/Al	10

TABLE I417–3.—UNCOMMON TOXIC PROPELLANTS AND COMBUSTION BY-PRODUCTS

Item	Chemical name	Formula	Toxic concentration threshold (ppm)
1	Fluorine	F_2	
2	Hydrogen Fluoride	HF	Determined according to § I417.3(c)
3	Potassium Perchlorate	$KClO_4$	
4	Lithium Perchlorate	$LiClO_4$	
5	Chlorine Oxides	Cl_2O, ClO_2, CL_2O_6, Cl_2O_7	
6	Chlorine Trifluoride	ClF_3	
7	Beryllium	Be	
8	Beryllium Borohydride	$Be(BH_4)_2$	
9	Boron	B	
10	Boron Trifluoride	BF_3	
11	Diborane	B_2H_6	
12	Pentaborane	B_5H_9	
13	Hexaborane	B_6H_{10}	
14	Aluminum Borohydride	$Al(BH_4)_3$	
15	Lithium Borohydride	$Li(BH_4)_2$	
16	Ammonia	NH_3	
17	Ammonium Nitrate	NH_4NO_3	
18	Ozone	O_3	
19	Methylamine	CH_3NH_2	
20	Ethylamine	$CH_3CH_2NHH_2$	
21	Triethylamine	$(C_2H_5)_3N$	
22	Ethylenediamine	$NH_2CH_2CH_2NH_2$	
23	Diethylenetriamine	$NH_2C_2H_4NHC_2H_4NH_2$	
24	Aniline	$C_6H_5NH_2$	
25	Monoethylaniline	$C_6H_5NHC_2H_5$	
26	Xylidine	$(CH_3)_2C_6H_3NH_3$	
27	Trimethylaluminum	$Al(CH_3)_3$	
28	Dimethylberyllium	$Be(CH_3)_2$	
29	Nitromethane	CH_3NO_2	
30	Tetranitromethane	$C(NO_2)_4$	
31	Nitroglycerine	$C_3H_5(ONO_2)_3$	
32	Butyl Mercaptan	$CH_3(CH_2)_2CH_2SH$	
33	Dimethyl Sulfide	$(CH_3)_2S$	
34	Tetraethyl Silicate	$(C_2H_5)_4SiO_4$	

I417.5 Toxic Release Hazard Analysis for Launch Vehicle Flight

(a) *General.* For each launch, a launch operator's toxic release hazard analysis must determine all hazards to the public from any toxic release that will occur during the proposed flight of a launch vehicle or that would occur in the event of a flight mishap. A launch operator shall use the results of the toxic release hazard analysis to establish for each launch, in accordance with § 417.113(b), flight commit criteria that protect the public from a casualty arising out of any potential toxic release. A launch operator's toxic release hazard analysis must determine if toxic release can occur based on an evaluation of the propellants, launch vehicle materials, and estimated combustion products. This evaluation must account for both normal combustion products and the chemical composition of any unreacted propellants.

(b) *Evaluating toxic hazards for launch vehicle flight.* Each launch must satisfy either the exclusion requirements of I417.3(b), the containment requirements of paragraph (c) of this section, or the statistical risk management requirements of paragraph (d) of this section, to prevent any casualty that could arise out of exposure to any toxic release.

(c) *Toxic containment for launch vehicle flight.* For a launch that uses any toxic propellant, a launch operator's toxic release hazard analysis must determine a hazard distance for each toxicant and a toxic hazard area for the launch. A hazard distance for a toxicant is the furthest distance from the launch point where toxic concentrations may be greater than the toxicant's toxic concentration threshold in the event of a release during flight. A launch operator shall determine the toxic hazard distance for each toxicant in accordance with paragraphs (c)(1) and (c)(2) of this section. A toxic hazard area defines the region on the Earth's surface that may be exposed to toxic concentrations greater than any toxic concentration threshold for any toxicant involved in a launch in the event of a release during flight. A launch operator shall determine a toxic hazard area in accordance with paragraph (c)(3) of this section. In order to achieve containment, a launch operator shall evacuate the public from a toxic hazard area in accordance with the requirements of paragraph (c)(4) of this section or employ meteorological constraints in accordance with the requirements of paragraph (c)(5) of this section. A launch operator shall determine the hazard distance for a quantity of toxic propellant and determine and implement a toxic hazard area for a launch in accordance with the following:

(1) *Hazard distances for common propellants.* Table I417–4 lists toxic hazard distances as a function of propellant quantity and toxic concentration threshold for commonly used propellants released from a catastrophic launch vehicle failure. Tables I417–10 and I417–11 list the hazard distance as a function of solid propellant mass for HC1 emissions during a launch vehicle failure and during normal flight for ammonium perchlorate based solid propellants. A launch operator shall use the hazard distances corresponding to the toxic concentration thresholds established for a launch to determine the toxic hazard area for the launch in accordance with paragraph (c)(3) of this section.

(2) *Hazard distances for uncommon or unique propellants.* For a launch that involves any uncommon or unique propellant, a launch operator shall determine the toxic hazard distance for each such propellant using an analysis methodology that accounts for the following worst case conditions:

(i) Surface wind speed of 2.9 knots with a wind speed increase of 1.0 knot per 1000 feet of altitude.

(ii) Surface temperature of 32 degrees Fahrenheit with a dry bulb temperature lapse rate of 13.7 degrees Fahrenheit per 1000 feet over the first 500 feet of altitude and a lapse rate of 3.0 degrees F per 1000 feet above 500 feet.

(iii) Directional wind shear of 2 degrees per 1000 feet of altitude.

(iv) Relative humidity of 50 percent.

(v) Capping temperature inversion at the thermally stabilized exhaust cloud center of mass altitude.

(vi) Worst case initial source term assuming instantaneous release of fully loaded propellant storage tanks or pressurized motor segments.

(vii) Worst case combustion or mixing ratios such that production of toxic chemical species is maximized within the bounds of reasonable uncertainties.

(viii) Evaluation of toxic hazards for both normal launch and vehicle abort failure modes.

TABLE I417–4.—HAZARD DISTANCES FROM THE LAUNCH POINT

Quantity [pounds]	Concentrations [ppm] and Hazard Distances [km]						
	NO_2 4 ppm [1] [km]	UDMH 5 ppm [1] [km]	N_2H_4 8 ppm [1] [km]	MMH 5 ppm [1] [km]	NO 4 ppm [1] [km]	HNO_3 4 ppm [1] [km]	HCl [2] 10 ppm [1] [km]
100	8	4	3	5	9	8	0
300	14	8	7	9	17	15	0
500	18	10	8	12	20	19	0
1000	26	15	11	17	26	24	0
2000	36	19	13	21	33	31	0
3000	44	22	15	24	39	35	1
4000	47	24	16	27	42	39	2
5000	50	26	17	29	45	42	2
7500	58	30	20	35	52	48	2
10000	64	34	22	37	58	52	3
20000	78	42	27	47	71	66	4
30000	91	47	29	55	81	76	5
40000	99	52	31	59	88	81	5
50000	105	56	34	64	100	87	6
60000	111	59	35	67	104	92	7
70000	116	62	36	72	109	100	8
80000	123	64	37	74	114	104	9
90000	126	68	38	77	118	108	9
100000	130	69	39	79	122	111	10
125000	138	74	42	85	131	119	12
150000	145	78	44	95	138	125	13
175000	151	81	45	99	144	131	14
200000	160	88	47	103	156	136	16
250000	167	94	49	110	163	148	18
300000	175	99	50	117	171	155	21
350000	182	103	52	122	179	161	22
400000	189	107	53	128	186	167	25
450000	203	110	54	132	193	173	27
500000	207	114	57	136	196	178	28

TABLE I417–4.—HAZARD DISTANCES FROM THE LAUNCH POINT—Continued

Quantity [pounds]	Concentrations [ppm] and Hazard Distances [km]						
	NO_2 4 ppm [1] [km]	UDMH 5 ppm [1] [km]	N_2H_4 8 ppm [1] [km]	MMH 5 ppm [1] [km]	NO 4 ppm [1] [km]	HNO_3 4 ppm [1] [km]	HCl [2] 10 ppm [1] [km]
750000	230	127	61	157	206	184	37
1000000	247	140	64	170	220	195	43

[1] Indicates a toxic concentration threshold from Table I417–2.
[2] HCL emissions from catastrophic launch vehicle failure.

(3) *Toxic hazard area.* Having determined the toxic hazard distance for each toxicant, a launch operator shall determine the toxic hazard area for a launch as a circle centered at the launch point with a radius equal to the greatest toxic hazard distance determined in accordance with paragraphs (c)(1) and (c)(2) of this section, of all the toxicants involved in the launch. A launch is exempt from any further requirements in this section if:

(i) The launch operator demonstrates that there are no populated areas contained or partially contained within the toxic hazard area; and

(ii) The launch operator ensures that no member of the public is present within the toxic hazard area during preflight fueling, launch countdown, flight and immediate postflight operations at the launch site. To ensure the absence of the public, a launch operator shall develop flight commit criteria and related provisions for implementation as part of the launch operator's flight safety plan and security and hazard area surveillance plan developed according to § 415.115(d) and § 415.119(h) of the chapter, respectively.

(4) *Evacuation of populated areas within a toxic hazard area.* For a launch where there is a populated area that is contained or partially contained within a toxic hazard area, the launch is exempt from any further requirements in this section if the launch operator evacuates all people from all populated areas at risk and ensures that no member of the public is present within the toxic hazard area during preflight fueling and flight. A launch operator shall develop flight commit criteria and provisions for implementation of the evacuations as part of the launch operator's flight safety plan, security and hazard area surveillance plan, and local agreements and plans developed according to § 415.115(d), § 415.119(h) and § 415.119(j) of the chapter, respectively.

(5) *Flight meteorological constraints.* For a launch where there is a populated area that is contained or partially contained within a toxic hazard area and that will not be evacuated according to paragraph (c)(4) of this section, the launch is exempt from any further requirements of this section if the launch operator constrains the flight of a launch vehicle to favorable wind conditions or during times when atmospheric conditions result in reduced toxic hazard distances such that any potentially affected populated area is outside the toxic hazard area. A launch operator shall employ wind and other meteorological constraints in accordance with the following:

(i) When employing wind constraints, a launch operator shall re-define the toxic hazard area by reducing the circular toxic hazard area determined in accordance with paragraph (c)(3) of this section to one or more arc segments that do not contain any populated area. Each arc segment toxic hazard area must have the same radius as the circular toxic hazard area and must be defined by a range of downwind bearings.

(ii) The launch operator shall demonstrate that there are no populated areas within any arc segment toxic hazard area and that no member of the public is present within an arc segment toxic hazard area during preflight fueling, launch countdown, and immediate postflight operations at the launch site.

(iii) A launch operator shall establish wind constraints to ensure that any winds present at the time of flight will transport any toxicant into an arc segment toxic hazard area and away from any populated area. For each arc segment toxic hazard area, the wind constraints must consist of a range of downwind bearings that are within the arc segment toxic hazard area and that provide a safety buffer, in both the clockwise and counterclockwise directions, that accounts for any uncertainty in the spatial and temporal variations of the transport winds. When determining the wind uncertainty, a launch operator shall account for the variance of the mean wind directions derived from measurements of the winds through the first 6000 feet in altitude at the launch point. Each clockwise and counterclockwise safety buffer must be no less than 20 degrees of arc width within the arc segment toxic hazard area. A launch operator shall ensure that the wind conditions at the time of flight are in accordance with the wind constraints. To accomplish this, a launch operator shall monitor the launch site vertical profile of winds from the altitude of the launch point to no less than 6,000 feet above ground level. The launch operator shall proceed with a launch only if all wind vectors within this vertical range satisfy the wind constraints. A launch operator shall develop wind constraint flight commit criteria and implementation provisions as part of the launch operator's flight safety plan and its security and hazard area surveillance plan developed according to § 415.115(d) and § 415.119(h) of the chapter, respectively.

(iv) A launch operator may reduce the radius of the circular toxic hazard area determined in accordance with paragraph (c)(3) of this section by imposing operational meteorological restrictions on specific parameters that mitigate potential toxic downwind concentrations levels at any potentially affected populated area to levels below the toxic concentration threshold of each toxicant in question. The launch operator shall establish meteorological constraints to ensure that flight will be allowed to occur only if the specific meteorological conditions that would reduce the toxic hazard area exist and will continue to exist throughout the flight.

(d) *Statistical toxic risk management for flight.* If a launch that involves the use of a toxic propellant does not satisfy the containment requirements of paragraph (c) of this section, the launch operator shall use statistical toxic risk management to protect public safety. For each such case, a launch operator shall perform a toxic risk assessment and develop launch commit criteria that protect the public from unacceptable risk due to planned and potential toxic release. A launch operator shall ensure that the resultant toxic risk meets the collective and individual risk criteria requirements contained in § 417.107(b). A launch operator's toxic risk assessment must account for the following:

(1) All credible vehicle failure and non-failure modes, along with the consequent release and combustion of propellants and other vehicle combustible materials.

(2) All vehicle failure rates.

(3) The effect of positive or negative buoyancy on the rise or descent of each released toxicant.

(4) The influence of atmospheric physics on the transport and diffusion of each toxicant.

(5) Meteorological conditions at the time of launch.

(6) Population density, location, susceptibility (health categories) and sheltering for all populations within each potential toxic hazard area.

(7) Exposure duration and toxic propellant concentration or dosage that would result in casualty for all populations.

(e) *Flight toxic release hazard analysis products.* The products of a launch operator's toxic release hazard analysis for launch vehicle flight to be submitted in accordance with § 417.203(c) must include the following:

(1) For each launch, a listing of all propellants used on all launch vehicle components and any payloads.

(2) The chemical composition of each toxic propellant and all toxic combustion products.

(3) The quantities of each toxic propellant and all toxic combustion products involved in the launch.

(4) For each toxic propellant and combustion product, identification of the toxic concentration threshold used in the toxic risk analysis and a description of how

the toxic concentration threshold was determined if other than specified in table I417.2.

(5) When using the toxic containment approach of paragraph (c) of this section:

(i) The hazard distance for each toxic propellant and combustion product and a description of how it was determined.

(ii) A graphic depiction of the toxic hazard area or areas.

(iii) A listing of any wind or other constraints on flight, and any plans for evacuation.

(iv) A description of how the launch operator determines real-time wind direction in relation to the launch site and any populated area and any other meteorological condition in order to implement constraints on flight or to implement evacuation plans.

(6) When using the statistical toxic risk management approach of paragraph (d) of this section:

(i) A description of the launch operator's toxic risk management process including an explanation of how the launch operator ensures that any toxic risk from launch meets the toxic risk criteria of § 417.107(b).

(ii) A listing of all models used.

(iii) A listing of all launch commit criteria that protect the public from unacceptable risk due to planned and potential toxic release.

(iv) A description of how the launch operator measures and displays real-time meteorological conditions in order to determine whether conditions at the time of flight are within the envelope of those used by the launch operator for toxic risk assessment and to develop flight commit criteria, or for use in any real-time physics models used to ensure compliance with the toxic flight commit criteria.

I417.7 Toxic Release Hazard Analysis for Launch Processing

(a) *General.* A launch operator shall perform a toxic release hazard analysis to determine any potential public hazards from any toxic release that will occur during normal launch processing and that would occur in the event of a mishap during launch processing. The requirements of this section apply to launch processing at a launch site in the United States pursuant to the ground safety requirements of subpart E of part 417. A launch operator shall use the results of the toxic release hazard analysis to establish hazard controls for protecting the public. These results shall be included in the launch operator's ground safety plan according to § 415.117(b) of this chapter and § 417.403(c) of part 417 to be implemented in accordance with § 417.407. A launch operator's toxic release hazard analysis must determine if toxic release can occur based on an evaluation of the design and certification of propellant ground storage tanks, propellant transfer systems, launch vehicle tanks, and vehicle processing procedures that handle either liquid or solid propellants. This evaluation must account for potential release of unreacted toxic propellants and any combustion or other reaction products that may result from a release.

(b) *Process hazards analysis.* A launch operator shall perform a process hazards analysis on all processes to identify toxic hazards and determine the potential for release of a toxic propellant. A process hazards analysis must account for the complexity of the process and shall identify and evaluate the hazards and each hazard control involved in the process. A launch operator's process hazards analysis must be in accordance with the following:

(1) A launch operator shall identify and evaluate the hazards of a process involving a toxic propellant using an analysis method such as a failure mode and effects analysis or fault tree analysis.

(2) A process hazard analysis must account for:

(i) All toxic hazards associated with the process and the potential for release of any toxic propellant.

(ii) Any mishap or incident experienced which had a potential for catastrophic consequences.

(iii) Engineering and administrative controls applicable to the hazards and their interrelationships, such as application of detection methodologies to provide early warning of releases and evacuation of toxic hazard areas prior to conducting an operation that involves a toxicant.

(iv) Consequences of failure of engineering and administrative controls.

(v) Location of the source of the release.

(vi) Human factors.

(vii) Opportunities for equipment malfunctions or human errors that could cause an accidental release.

(viii) The safeguards used or needed to control the hazards or prevent equipment malfunctions or human error.

(ix) Any steps or procedures needed to detect or monitor releases.

(x) A qualitative evaluation of a range of the possible safety and health effects of failure of controls.

(3) A process hazards analysis completed to comply with 29 CFR 1910.119(e) satisfies the requirements of paragraphs (b)(1) and (b)(2) of this section.

(4) A launch operator shall ensure that a process hazards analysis is updated for each launch. For all launch processing, the launch operator shall conduct a review of the hazards associated with each process involving a toxic propellant. The review must include inspection of all equipment to determine whether the process is designed, fabricated, maintained, and operated according to the current process hazards analysis. A launch operator shall revise a process hazards analysis to reflect any changes in processes, types of toxic propellants stored or handled, or any other aspect of a source of a potential toxic release that could affect the results of overall toxic release hazard analysis.

(5) A launch operator shall ensure that the personnel who perform a process hazard analysis possess expertise in engineering and process operations, and at least one person has experience and knowledge specific to the process being evaluated. Also, at least one person must be knowledgeable in the specific process hazard analysis methodology being used.

(6) A launch operator shall ensure that any recommendations resulting from a process hazards analysis are resolved in a timely manner prior to launch processing and that the resolution is documented. The documentation must identify any corrective actions to be taken and include a written schedule of when such actions are to be completed.

(c) *Evaluating toxic hazards of launch processing.* For each potential toxic hazard involved in launch processing as identified by the process hazards analysis required by paragraph (b) of this section, a launch operator shall protect the public in accordance with either the exclusion requirements of I417.3(b) of this appendix, the containment requirements of paragraph (d) of this section, or the statistical risk management requirements of paragraph (l) of this section, to prevent any casualty that could arise out of exposure to any toxic release.

(d) *Toxic containment for launch processing.* A launch operator's toxic release hazard analysis for launch processing must determine a toxic hazard area surrounding the potential release site for each toxic propellant based on the amount and toxicity of the propellant and the meteorological conditions involved. A launch operator shall determine whether there are any populated areas located within a toxic hazard area in accordance with paragraph (h) of this section. In order to achieve containment, a launch operator shall evacuate the public in accordance with the requirements of paragraph (i) of this section or employ meteorological constraints in accordance with the requirements of paragraph (j) of this section. To determine a toxic hazard area, a launch operator shall first perform a worst-case release scenario analysis according to paragraph (e) of this section or a worst-case credible alternative release scenario analysis in accordance with paragraph (f) of this section for each process that involves a toxic propellant and then determine a toxic hazard distance for each process according to paragraph (g) of this section.

(e) *Worst-case release scenario analysis.* A launch operator's worst-case release scenario analysis must be in accordance with the following:

(1) *Determination of worst-case release quantity.* A launch operator's worst-case release quantity of a toxic propellant must be the greater of the following:

(i) For substances in a vessel, the greatest amount held in a single vessel, taking into account administrative controls that limit the maximum quantity; or

(ii) For toxic propellants in pipes, the greatest amount in a pipe, taking into account administrative controls that limit the maximum quantity.

(2) *Worst-case release scenario for toxic liquids.* A launch operator's worst-case release scenario for a toxic liquid propellant must be in accordance with the following:

(i) For toxic propellants that are normally liquids at ambient temperature, a launch operator shall assume that the quantity in the vessel or pipe, as determined in accordance with paragraph (e)(1) of this section, is spilled instantaneously to form a liquid pool.

(ii) The surface area of the pool shall be determined by assuming that the liquid spreads to one centimeter deep unless passive mitigation systems are in place that serve to contain the spill and limit the surface area. Where passive mitigation is in place, the surface area of the contained liquid shall be used to calculate the volatilization rate.

(iii) If the release would occur onto a surface that is not paved or smooth, actual surface characteristics may be taken into account.

(iv) The volatilization rate shall account for the highest daily maximum temperature occurring in the past three years, the temperature of the substance in the vessel, and the concentration of the toxic propellants if the liquid spilled is a mixture or solution.

(v) The rate of release to the air shall be determined from the volatilization rate of the liquid pool. A launch operator shall use either the methodology provided in the Risk Management Plan (RMP) Offsite Consequence Analysis Guidance, available at http:/www.epa.gov/swercepp/ap-ocgu.htm, or an air dispersion modeling technique in accordance with paragraph (g) of this section.

(3) *Worst-case release scenario for toxic gases.* A launch operator's worst-case release scenario for a toxic gas shall be in accordance with the following:

(i) For toxic propellants that are normally gases at ambient temperature and handled as a gas or as a liquid under pressure, assume that the quantity in the vessel, or pipe, determined according to paragraph (e)(1) of this section, is released as a gas over 10 minutes. The release rate shall be assumed to be the total quantity divided by 10 unless passive mitigation systems are in place.

(ii) For gases handled as refrigerated liquids at ambient pressure, if the released toxic propellant is not contained by passive mitigation systems or if the contained pool would have a depth of 1 cm or less, assume that the toxic propellant is released as a gas in 10 minutes.

(iii) For gases handled as refrigerated liquids at ambient pressure, if the released toxic propellant is contained by passive mitigation systems in a pool with a depth greater than 1 cm, assume that the quantity in the vessel or pipe, determined in accordance with paragraph (e)(1) of this section, is spilled instantaneously to form a liquid pool. The volatilization rate shall be calculated at the boiling point of the toxic propellant and at the conditions specified in paragraph (e)(2) of this section.

(4) *Consideration of passive mitigation.* Passive mitigation systems may be accounted for in the analysis of worst case if the passive mitigation system is capable of withstanding the release event triggering the scenario and would function as intended.

(5) *Additional factors in selecting a worst-case scenario.* A launch operator's worst-case release scenario for a toxic propellant must account for any other factors that would result in a greater toxic hazard distance, such as a smaller quantity of the toxic propellant than required by paragraph (e)(1) of this section that is handled at a higher process temperature or pressure.

(f) *Worst-case credible alternative release scenario analysis.* A launch operator's worst-case credible alternative release scenario analysis must account for all of the following:

(1) The worst-case credible release scenario for each toxic propellant and for each toxic propellant handling process.

(2) Any release event that is more likely to occur than the worst-case release scenario that is determined according paragraph (e) of this section.

(3) Any release scenario that exceeds a toxic concentration threshold at a distance that reaches the general public.

(4) Any potential transfer hose releases due to splits or sudden hose uncoupling.

(5) Any potential process piping release from failures at flanges, joints, welds, valves and valve seals, and drains bleeds.

(6) Any potential process vessel or pump release due to cracks, seal failure, or drain, bleed, or plug failure.

(7) Vessel overfilling and spill, or over pressurization and venting through relief valves or rupture disks.

(8) Shipping container mishandling and breakage or puncturing leading to a spill.

(9) Mishandling or dropping hardware (flight or ground) that contains toxic commodities.

(10) Active and passive mitigation systems provided they are capable of withstanding the event that triggered the release and would still be functional.

(11) History of accidents experienced by the launch operator involving the release of a toxic propellant.

(12) Failure scenarios.

(g) *Toxic hazard distances for launch processing.* For each process involving a toxic propellant, a launch operator shall perform an air dispersion analysis to determine the hazard distance for the worst-case release scenario or the worst-case credible release scenario determined according to paragraphs (e) and (f) of this section. A launch operator shall use either the methodology provided in the RMP Offsite Consequence Analysis Guidance or an air dispersion modeling technique that is applicable to the proposed launch. Through the licensing process, a launch operator shall demonstrate, clearly and convincingly, the applicability of its air dispersion modeling technique to the proposed launch. A launch operator's air dispersion modeling technique must account for the following analysis parameters:

(1) *Toxic concentration thresholds.* When determining a toxic hazard distance for launch processing at a U.S. launch site, a launch operator shall use the toxic concentration thresholds determined in accordance with § I417.3(c).

(2) *Wind speed and atmospheric stability class.* For the worst-case release analysis, a launch operator shall use a wind speed of 1.5 meters per second and atmospheric stability class F. If it can be demonstrated that local meteorological data applicable to the source of a toxic release show a higher wind minimum wind speed or less stable atmosphere at all times during the three previous years, these minimums may be used. For analysis of the worst-case credible alternative scenario, the launch operator shall use statistical meteorological conditions for the location of the source.

(3) *Ambient temperature and humidity.* For a worst-case release scenario analysis of a toxic propellant, the highest daily maximum temperature from the last three years and average humidity for the site, based on temperature and humidity data gathered at the source location or at a local meteorological station shall be used. For analysis of worst-case credible alternative release scenarios typical temperature and humidity data gathered at the source location or at local meteorological station shall be used.

(4) *Height of release.* The worst-case release of a toxic propellant shall be analyzed assuming a ground level release. For a worst-case credible alternative scenario analysis of a toxic propellant, the release scenario may determine release height.

(5) *Surface roughness.* Either an urban or rural topography shall be used, as appropriate. Urban means that there are many obstacles in the immediate area; obstacles include buildings or trees. Rural means there are no buildings in the immediate area and the terrain is generally flat and unobstructed.

(6) *Dense or neutrally buoyant gases.* Models or tables used for dispersion analysis of a toxic propellant must account for gas density.

(7) *Temperature of release substance.* For worst-case, liquids other than gases liquefied by refrigeration only shall be considered to be released at the highest daily maximum temperature, based on data for the previous three years appropriate to the source of the potential toxic release, or at process temperature, whichever is higher. For worst-case credible alternative scenarios, toxic propellants may be considered to be released at a process or ambient temperature that is appropriate for the scenario.

(h) *Toxic hazard areas for launch processing.* Having determined the toxic hazard distance for the toxic concentration threshold for each toxic propellant involved in a process using either a worst-case release scenario or a worst-case credible alternative release scenario, a launch operator shall determine the toxic hazard area for the process as a circle centered at the potential release point with a radius equal to the greatest toxic hazard distance for all the toxic propellants involved in the process. A launch vehicle processing operation is exempt from any further requirements in this section if:

(1) The launch operator ensures there are no populated areas contained or partially contained within the toxic hazard area; and

(2) The launch operator ensures that no member of the public is present within the toxic hazard area during the process.

(i) *Evacuation of populated areas within a toxic hazard area.* For a process where there is a populated area that is contained or partially contained within the toxic hazard area, the launch processing operation is exempt from any further requirements in this section if the launch operator evacuates all members of the public from the populated area and ensures that no member of the public is present within the toxic hazard area during the operation. A launch operator shall coordinate notification and evacuation procedures with the Local Emergency Planning Committee (LEPC) and ensure that notification and evacuation is implemented according to its launch plans submitted during the licensing process, according to § 415.119, including the launch operator's ground safety plan, security and hazard area surveillance plan and public coordination plan.

(j) *Meteorological constraints for launch processing.* For a launch processing operation with the potential for a toxic release where there is a populated area that is contained or partially contained within the toxic hazard area and that will not be evacuated according to paragraph (i) of this section, the operation is exempt from any further requirements in this section if the launch operator constrains the process to favorable wind conditions or during times when atmospheric conditions result in reduced toxic hazard distances such that any potentially affected populated area is outside the toxic hazard area. A launch operator shall employ wind and other meteorological constraints in accordance with the following:

(1) A launch operator shall limit a launch processing operation to times during which prevailing winds will transport any toxic release away from populated areas that would otherwise be at risk. To accomplish this, the launch operator shall re-define the toxic hazard area by reducing the circular toxic hazard area determined according to paragraph (h) of this section to one or more arc segments that do not contain any populated area. Each arc segment toxic hazard area must have the same radius as the circular toxic hazard area and must be defined by a range of downwind bearings. When applying this approach, the mean wind speed during the operation must be equal to or greater than four knots. If the mean wind speed is less than four knots, the toxic hazard area for the operation must be the full 360-degree toxic hazard area determined in accordance with paragraph (h) of this section. The total arc width of an arc segment hazard area for launch processing must be greater than or equal to 30 degrees. If the launch operator determines the standard deviation of the measured wind direction, ± three-sigma shall be used for the arc segment hazard area; otherwise, the following apply for the conditions defined by the Pasquil-Gifford meteorological stability classes:

(i) For stable classes (D–F), if the mean wind speed is less than 10 knots, the total arc width of the arc segment toxic hazard area must be no less than 90 degrees.

(ii) For stable classes (D–F), if the mean wind speed is greater than or equal to 10 knots, the total arc width of the arc segment toxic hazard area must be no less than 45 degrees.

(iii) For neutral class (C), the total arc width of the arc segment toxic hazard area must be no less than 60 degrees.

(iv) For slightly unstable class (B), the total arc width of the arc segment toxic hazard area must be no less than 105 degrees.

(v) For mostly unstable class (A), the total arc width of the arc segment toxic hazard area must be no less than 150 degrees.

(2) The launch operator shall ensure that there are no populated areas within any arc segment toxic hazard area and that no member of the public is present within an arc segment toxic hazard area during the process in accordance with paragraph (i) of this section.

(3) A launch operator shall establish wind constraints to ensure that any winds present at the time of an operation will transport any toxicant into an arc segment toxic hazard area and away from any populated area. For each arc segment toxic hazard area, the wind constraints must consist of a range of downwind bearings that are within the arc segment toxic hazard area and that provide a safety buffer, in both the clockwise and counterclockwise directions, that accounts for any uncertainty in the spatial and temporal variations of the transport winds.

(4) A launch operator may reduce the radius of the circular toxic hazard area determined according to paragraph (h) of this section by imposing operational meteorological restrictions on specific parameters that mitigate potential toxic downwind concentrations levels at any potentially affected populated area to levels below the toxic concentration threshold of the toxicant in question. The launch operator shall establish meteorological constraints to ensure that the operation will be allowed to occur only if the specific meteorological conditions that would reduce the toxic hazard area exist and will continue to exist throughout the operation, or the operation will be terminated.

(k) *Implementation of meteorological constraints.* A launch operator shall use one or more of the following approaches to determine wind direction or other meteorological conditions in order to implement constraints on a launch processing operation or implement evacuation of a populated area in a potential toxic hazard area:

(1) The launch operator shall ensure that the wind conditions at the time of the process are in accordance with the wind constraints used to define each arc segment toxic hazard area. The launch operator shall monitor the vertical profile of winds at the potential toxic release site from ground level to an altitude of 10 meters or the maximum height above ground of the potential release, which ever is larger. The launch operator shall proceed with a launch processing operation only if all wind vectors meet the wind constraints used to define each arc segment toxic hazard area.

(2) A launch operator shall monitor the specific meteorological parameters that affect toxic downwind concentrations at a potential toxic release site for a process and for the sphere of influence out to each populated area within the potential toxic hazard area determined in accordance with paragraph (h) of this section. The launch operator shall monitor any spatial variations in the wind field that could affect the transport of toxic material between the potential release site and any populated areas. The launch operator shall acquire real-time meteorological data from sites between the potential release site and each populated area sufficient to demonstrate that the toxic hazard area, when adjusted to the spatial wind field variations, excludes any populated area. All meteorological parameters that affect toxic downwind concentrations from the potential release site and covering the sphere of influence out to the populated areas must fall within the conditions determined according to paragraph (j)(4) of this section. A launch operator shall use one of the following methods to determine the meteorological conditions that will constrain a launch processing operation:

(i) A launch operator may employ real-time air dispersion models to determine the toxic hazard distance for the toxic concentration threshold of a toxicant and its proximity to any populated area. When employing this method, a launch operator shall proceed with a launch processing operation only if real-time modeling of the potential release demonstrates that the toxic hazard distance would not reach any populated area. The launch operator's process for implementing this method must include the use of an air dispersion modeling technique that satisfies paragraph (g) of this section and providing real-time meteorological data for the sphere of influence around a potential toxic release site as input to the air dispersion model. The launch operator's process must also include a review of the meteorological conditions to identify any changing conditions that could affect the toxic hazard distance for a toxic concentration threshold prior to proceeding with the operation.

(ii) A launch operator may use air dispersion modeling techniques to define the meteorological conditions that, when they exist, would preclude a toxic hazard distance for a toxic concentration threshold from reaching any populated area. When employing this method, the launch operator shall constrain the associated launch processing operation to be conducted only when the prescribed meteorological conditions exist. A launch operator's air dispersion modeling technique must be in accordance with paragraph (g) of this section.

(l) *Statistical toxic risk management for launch processing.* If a process that involves the use of a toxic propellant does not satisfy the containment requirements of paragraph (d) of this section, the launch operator shall use statistical toxic risk management to protect public safety. For each such case, a launch operator shall perform a toxic risk assessment and develop criteria that protect the public from unacceptable risk due to planned and potential toxic release. A launch operator shall ensure that the resultant toxic risk meets the collective and individual risk criteria requirements contained in § 417.107(b). A launch operator's toxic risk assessment must account for the following:

(1) All credible equipment failure and non-failure modes, along with the consequent release and combustion of toxic propellants.

(2) Equipment failure rates.

(3) The effect of positive or negative buoyancy on the rise or descent of the released toxic propellants.

(4) The influence of atmospheric physics on the transport and diffusion of toxic propellants released.

(5) Meteorological conditions at the time of the process.

(6) Population density, location, susceptibility (health categories) and sheltering for all populations within each potential toxic hazard area.

(7) Exposure duration and toxic propellant concentration or dosage that would result in casualty for all populations.

(m) *Launch processing toxic release hazard analysis products.* The products of a launch operator's toxic release hazards analysis for launch processing that must be included as part of the launch operator ground safety analysis report in accordance with § 415.117(a) and appendix C of part 415 of this chapter must include the following:

(1) For each worst-case release scenario, a description of the vessel or pipeline and toxic propellant selected as the worst case for each process, assumptions and parameters used, and the rationale for selection; assumptions must include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released. The description must include the anticipated effect of any controls and mitigation on the release quantity and rate.

(2) For each worst-case credible alternative release scenario, a description of the scenario identified for each process, assumptions and parameters used, and the rationale for the selection of that scenario. Assumptions must include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released. The description must include the anticipated effect of the controls and mitigation on the release quantity and rate.

(3) Estimated quantity released, release rate, and duration of release for each worst-case scenario and worst-case credible alternative scenario for each process.

(4) A description of the methodology used to determine the toxic hazard distance for each toxic concentration threshold.

(5) Data used to estimate off-site population receptors potentially affected.

(6) The following data for each worst-case scenario and worst-case credible alternative release scenario:

(i) Chemical name.

(ii) Physical state.

(iii) Basis of results (provide model name if used, or other methodology).

(iv) Scenario (explosion, fire, toxic gas release, or liquid spill and vaporization).

(v) Quantity released in pounds.

(vi) Release rate.

(vii) Release duration.

(viii) Wind speed and atmospheric stability class.

(ix) Topography.

(x) Toxic hazard distance.

(xi) Any member of the public within the toxic hazard distance.

(xii) Any passive mitigation considered.

(xiii) Active mitigation considered (worst-case credible alternative release scenario only).

Issued in Washington, DC on September 13, 2000.

Patricia G. Smith,

Associate Administrator for Commercial Space Transportation.

[FR Doc. 00–24472 Filed 10–24–00; 8:45 am]

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October 25, 2000

Part III

Environmental Protection Agency

40 CFR Part 176

Time-Limited Tolerances for Pesticide Emergency Exemptions; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 176

[OPP–181051A; FRL–6749–7]

RIN 2070–AD15

Time-Limited Tolerances for Pesticide Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This final rule governs the establishment of time-limited tolerances and exemptions for residues of a pesticide chemical resulting from its emergency use as authorized under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The purpose of this rule is to set into place a process that will ensure timely decisions on any tolerance related issue in response to a request for an emergency use of a pesticide chemical to be used in or on food or feed. Under this rule, EPA will implement the provisions of the Federal Food, Drug, and Cosmetic Act (FFDCA) related to FIFRA section 18 time-limited tolerances by evaluating each petition on a case-by-case basis to determine if adequate reliable data are available to make the required safety finding mandated under FFDCA section 408. This rule pertains only to regulatory changes resulting from the 1996 enactment of the Food Quality Protection Act (FQPA) which amended FFDCA.

DATES: This rule is effective November 24, 2000.

FOR FURTHER INFORMATION CONTACT: *For general information contact*: Joseph E. Hogue, Office of Pesticide Programs (7506C), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (703) 308–9072; e-mail address: hogue.joe@epa.gov.

For applicability questions contact: Robert Forrest, Chief, Minor Use, Inerts and Emergency Response Branch (7505C), Registration Division, Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (703) 308–9376; e-mail address: forrest.robert@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be potentially affected by this final rule if you are the Federal government or a State or Territorial government agency charged with pesticide authority. Regulated categories and entities may include, but are not limited to:

Category	NAICS codes	Examples of potentially affected entities
Federal government State or Territorial governments	9241	Federal agencies that petition EPA for FIFRA section 18 use authorization States or territories charged with pesticide authority that petition EPA for FIFRA section 18 use authorization

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in this table could also be affected. The North American Industrial Classification System (NAICS) codes are provided to assist you and others in determining whether or not this action might apply to certain entities. If you have questions regarding the applicability of this action to a particular entity, consult § 176.1 or the person listed under **FOR FURTHER INFORMATION CONTACT**.

B. How Can I Get Additional Information, Including Copies of this Document and Other Related Documents?

1. *Electronically*. You may obtain electronic copies of this document, and certain other related documents that might be available electronically, from the EPA Internet Home Page at http://www.epa.gov/. To access this document, on the Home Page select ‘‘Laws and Regulations,’’ ‘‘Regulations and Proposed Rules,’’ and then look up the entry for this document under the ‘‘**Federal Register**—Environmental Documents.’’ You can also go directly to the **Federal Register** listings at http://www.epa.gov/fedrgstr/.

2. *In person*. The Agency has established an official record for this action under docket control number OPP–181051A. The official record consists of the documents specifically referenced in this action, any public comments received during an applicable comment period, and other information related to this action, including any information claimed as Confidential Business Information (CBI). This official record includes the documents that are physically located in the docket, as well as the documents that are referenced in those documents. The public version of the official record does not include any information claimed as CBI. The public version of the official record, which includes printed, paper versions of any electronic comments submitted during an applicable comment period, is available for inspection in the Public Information and Records Integrity Branch (PIRIB), Room 119, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, from 8:30 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. The PIRIB telephone number is (703) 305–5805.

II. Background

A. What Action is the Agency Taking?

The amendments to FFDCA, as prescribed by FQPA, went into effect immediately upon enactment on August 3, 1996. Under these amendments, EPA is required to conduct all pesticide tolerance-setting activities, including those approved for section 18 emergency exemptions, under an amended FFDCA section 408 with a new safety standard and new regulatory procedures. In the **Federal Register** of June 3, 1999 (64 FR 29823) (FRL–5750–1), EPA published, and opened for public comment, proposed regulations for setting time-limited tolerances for section 18 emergency exemptions. In its proposal, EPA described its current emergency exemption program and the interim practices taken to evaluate requests for section 18 tolerances or tolerance exemptions, and to establish section 18 tolerances, prior to the issuance of this final rule.

In the time period spanning from August 1996 to the present, EPA has been evaluating section 18 exemption requests and issuing associated tolerances or tolerance exemptions on a case-by-case basis. These evaluations have been determined based on materials submitted by Federal and State agencies in accordance with EPA guidance and interim procedures sent to them in September 1996 and further elaborated in Pesticide Registration Notice 97–1, dated January 1997, which is available in the OPP Docket (see Unit I.B.2). This non-binding interim approach to current section 18 tolerance decisions has remained in place while the Agency has developed this FFDCA section 408(l)(6) procedural regulation.

The June 3, 1999 proposal was strictly a procedural scheme and did not modify any regulatory policies associated with the approval of the emergency exemption itself under FIFRA. EPA proposed to establish a new part 176 in the CFR to house exclusively regulations governing the setting of time-limited tolerances for emergency exemptions. In summary, EPA proposed to:

1. Review data for establishing a time-limited tolerance only after a section 18 request has been submitted;

2. Evaluate each submission individually on a case-by-case basis to determine if adequate reliable information is available to make the required safety finding;

3. Not routinely require additional data to be generated and instead rely on submitted data already reviewed and evaluated; and

4. Strive to make a regulatory decision in a timely manner.

If a tolerance could not be established then the emergency exemption would not be granted. Time-limited tolerances would typically be set for a period of 24 months to allow the treated crop from the previous year's emergency application to clear the channels of trade.

In addition to the above proposed procedure, EPA solicited comments on several other options for addressing time-limited tolerances. One approach was to require a full data set to support section 18 tolerances in the same manner as is required for the establishment of permanent tolerances. EPA also considered requiring a minimum data set in which the applicant would need to provide a specific subset of the data normally required to establish a permanent tolerance. Under this approach, the Agency would evaluate only those defined studies in making its safety finding. EPA did not include either approach as its primary option because they did not allow for timely decisions. Another approach for setting time-limited tolerances was suggested by the National Food Processors' Association. If this approach were adopted, EPA would not conduct a full-risk assessment for a section 18 tolerance, but would instead assess the incremental risk of the proposed emergency pesticide use, that is, the amount that the proposed use would increase dietary risk above the risk from existing uses.

B. What is the Agency's Authority for Taking this Action?

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that ''emergency conditions exist which require such exemption.'' Regulations regarding EPA's implementation of FIFRA section 18 are codified in 40 CFR part 166.

FQPA amended the FFDCA by directing EPA to establish time-limited tolerances or tolerance exemptions for pesticide use authorized by EPA under section 18 of FIFRA that may result in residues in or on food or feed. Specifically the FFDCA section 408(l)(6) requires EPA to establish a tolerance or exemption from the requirement of a tolerance for pesticide chemical residues in or on food that will result from the use of a pesticide under an emergency exemption. Section 408(l)(6) also requires EPA to promulgate regulations governing the establishment of tolerances and tolerance exemptions for pesticide uses approved for emergency situations under FIFRA section 18. Section 408(e)(1) authorizes the Administrator to establish, modify, suspend, or revoke any tolerance or exemption from the requirement of a tolerance on her own initiative, and to establish general procedures and requirements to implement section 408. This final rule is issued under the authority of sections 408(e)(1)(c) and 408(l)(6) of FFDCA, as amended by FQPA.

III. Public Comment and EPA Response

EPA received a total of 10 comments in response to its proposed rule. Five States, two growers groups, two pesticide manufacturing companies, and one public interest group submitted comments. In addition, the National Food Processors' Association attached its previously submitted petition requesting that EPA use an incremented risk approach to its comments. This petition, entitled ''Petition To Issue A Regulation Governing Establishment Of Section 18 Tolerances,'' was co-sponsored by 19 associated grower groups. Everyone expressed support of EPA's premise that timeliness and rapid review of section 18 requests is the essence of the program. In this regard, all parties agreed that the Agency should only utilize ''available data in its section 18 tolerance reviews.''

EPA, in addition to considering changes based on public comments, also made minor changes to §§176.5 and 176.11(a) in the final rule to clarify the provisions and to conform to other regulations (particularly 40 CFR part 166). EPA has also changed the text of §176.3 slightly by changing ''a State, U.S. Territory, or Federal agency'' to ''any entity, authorized under section 18 of FIFRA to request an emergency exemption,'' and by changing ''declares'' a crisis exemption to ''issues.'' A similar change has been made to §176.15. These changes will eliminate any future need to amend these rules in the event that EPA's regulations or FIFRA are ever changed so that an entity other than a State, U.S. Territory, or Federal agency would be allowed to request an emergency exemption. Other changes to the final rule were made as discussed in this unit. Following is a summary of the significant comments received by EPA and its response to these comments.

A. EPA Should Adopt an Incremental Risk Approach to Setting Tolerances for Emergency Exemptions

Eight submitters commented on the approach EPA should take to establish time-limited tolerances for emergencies. Two commenters agreed with EPA's proposed scheme to set tolerances on a case-by-case basis using available, reliable information to make the required safety finding. Six commenters, while not critical of EPA's proposed approach, urged the Agency to instead implement an accelerated review process based on the incremental risk of the emergency use. One commenter thought that the minimum data set approach was ''intriguing'' and could deserve further consideration. This approach, it was stated, had the potential to lend clarity and objectivity to the section 18 process and eliminate the need for the Agency to use ''best judgement.''

The proponents of the incremental-risk approach argued that since emergency exemptions are by their very nature extreme situations, the process for addressing them should take this into account and they should be given special treatment. Pesticide use in an emergency is for a short term and generally is limited to a single-geographic area, therefore there is less exposure to the pesticide and minimal associated risk. One commenter noted that the Agency's policy of conducting a full-risk assessment for section 18 tolerances does not consider the limited scope and duration of the use. The commenter stated that performing full risk assessments each time a section 18 tolerance is requested not only slows down the entire section 18 review process, but also diverts Agency resources. According to the commenter an incremental-risk approach would eliminate the time pressures and would avoid the disruption to EPA's base pesticide regulatory programs.

In spite of the thoughtful comments on the fourth option, EPA believes that the case-by-case approach outlined in its proposal is the most practical approach that does not significantly sacrifice timeliness or efficiency and is in compliance with the law. It allows the Agency to make appropriate decisions quickly while fully protecting human health, especially infants and children, and safeguarding the environment. Moreover, this approach, coupled with the Agency's newly established Threshold of Regulation Policy for pesticide tolerances (see Unit IV.) may resolve many concerns expressed by those who favor the incremental-risk approach.

EPA is not prepared at this time to adopt the approach suggested by the commenters. In addition to presenting difficult legal issues, the incremental-risk approach may not be needed to address the commenters' concerns regarding purported EPA denial of section 18 emergency exemption petitions or a lack of timely review by the Agency of such petitions. EPA's initial implementation of the new tolerance requirement necessitated adjusting Agency procedures and involved some deviation from past EPA review times in handling section 18 emergency exemption requests. Now that EPA has had 4 years experience in setting section 18 emergency exemption tolerances, it believes that it has adequately adapted the emergency exemption process to deal with the longer lead-time inherent in the requirement for establishment of these tolerances. Further, as noted in this unit, the Agency's newly established Threshold of Regulation Policy for pesticide tolerances (see Unit IV.) may address many of the commenters' concerns.

B. The Timely Establishment of a Tolerance After Granting an Emergency Exemption is Crucial

Several commenters said that EPA should establish a tolerance at the time of the section 18 approval. The underlying concern was that the Agency would not be able to establish a tolerance before the crop is harvested or the commodity enters into interstate commerce. One person remarked that in addition to the presence of an emergency condition, growers are subject to increased uncertainty and anxiety the longer it takes the Agency to establish a tolerance. The commenters were concerned that crops treated in the course of an emergency would be considered adulterated and seized for the lack of an established tolerance.

As a general matter, the Agency agrees with the submitter. For new pesticides, the Agency grants a registration and establishes the required tolerances simultaneously. However, due to the urgent nature of pest emergencies, growers need to be able to lawfully apply a pesticide as soon as possible or face significant economic loss for that year. If the Agency concludes that it is unable to establish a time-limited tolerance for that use, it will notify the applicant immediately so that some other method of control for the emergency pest situation can be sought. EPA often has to balance its workload between establishing tolerances and processing section 18 requests. During peak periods for emergency exemption requests, resources used to set a tolerance could result in the delay of another State's section 18 application. Nonetheless, EPA is committed to working toward the goal of being able to set a tolerance at the same time as granting the emergency exemption. For example, in Fiscal Year (FY) 1999, EPA's average time to establish a tolerance once the exemption was granted was 66 days. This is significantly faster than the average of 87 days it took the Agency in FY 1998.

FFDCA section 408(l)(5) explains the conditions upon which foods and feeds may be subject to enforcement action due to pesticide residues. Under this subsection, if a tolerance is no longer in effect, i.e., it has been revoked or has expired, the crop may continue to be marketed if:

1. The crop was treated with an approved use of the pesticide at the time of treatment, and

2. The level of the residues do not exceed the tolerance in effect at the time the pesticide was applied.

In the second instance, it is important to note that the tolerance must be in place at the time the pesticide is used. This is why many States often submit section 18 emergency exemption requests several months prior to the onset of the emergency in anticipation of the 2–3 month time between issuing the exemption and establishing the tolerance. They acknowledge that for residues resulting from the use to be considered lawful once the tolerance has expired, the tolerance must be in place at the time of application, not the time of harvest. Nonetheless, EPA's policy of setting tolerances for longer duration than the exemption ensures that crops treated during an emergency situation should lawfully clear trade channels while the tolerance is still in effect.

C. All Emergency Exemptions Issued Under Section 18 Should Be Covered Under the ''Pipeline'' Provision

Many of those who submitted comments thought that the ''pipeline'' provision of 408(l)(5) should apply to exemptions declared under crisis situations. The ''pipeline'' can be described as those crops that have been treated legally with a pesticide that are still in the channels of trade when the tolerance is either revoked or, as in the case of an emergency exemption, has expired. Those who commented on this felt that although a tolerance is not in place at the time the unregistered pesticide is used, since the pesticide use was legal under FIFRA section 18, any resulting pesticide residues should also be considered legal and not subject to enforcement actions.

Crisis exemptions are by definition unpredictable. In instances where an emergency condition occurs suddenly and there is no time to formally request a specific emergency exemption, a State or Federal agency may issue a crisis exemption and permit the use of an unregistered pesticide (40 CFR 166.40). Under a crisis exemption a pesticide is almost always used in the field prior to the establishment of a tolerance. However, this situation can occur for specific exemptions as well. In many instances, a specific exemption request (especially with first-time tolerance requests) is granted and the pesticide may be used in the field prior to the establishment of the time-limited tolerance, where appropriate. EPA later conducts a full review and establishes the time-limited tolerance. If the time-limited tolerance is not set at a length of time to allow for crops to clear trade channels, or is not extended and therefore expires, commodities treated under these circumstances could be adulterated and subject to seizure.

In both of these instances the ''pipeline'' provision does not apply because a tolerance was not set at the time the pesticide is applied. The statutory requirement of FFDCA section 408(l)(5)(B) is not met. EPA cannot alter the requirements in the FFDCA through regulations. Nonetheless, as noted in this unit, EPA's policy of setting tolerances for longer duration than the section 18 exemption generally ensures that crops treated during an emergency situation should clear trade channels while the tolerance is still in effect.

Some commenters expressed concern that even though they legally applied a pesticide under a crisis emergency exemption, if after EPA review the necessary tolerance level would exceed the safety standard and by law could not be set, their entire crop could be subject to Federal enforcement measures. To avoid this potentially dire situation, States and Federal agencies are urged to consult with the Agency to determine whether the pesticide in question has particular safety issues or concerns before declaring a crisis.

D. Time-Limited Tolerances Should Be Set for Longer Than 24 Months

A few commenters thought EPA should consider establishing time-limited tolerances for longer than 2 years. One commenter remarked that certain exemptions will likely be needed for 3 or more years because issues such as new pest pressures or the development of resistance are not likely to go away once they have appeared. The commenter suggested EPA set tolerances for 3 years upon initially granting the section 18 request based on circumstances which are likely to persist over several years. The commenter added that an exemption such as one based on unusual weather patterns probably will not reoccur in succeeding years and a 2-year tolerance is adequate in this situation.

Under EPA's regulations, specific exemptions and public health exemptions can be authorized for periods of up to 1 year (40 CFR 166.28(a)). Since actions taken under this section are intended to address an emergency need for temporary pest relief, most section 18 exemptions are granted for one growing season. In the preamble to the proposed rule, EPA stated that it will typically set a time-limited tolerance for a 2-year period. This is expected to allow treated crops from the previous year to clear the channels of trade. The Agency is flexible on this point and may set time-limited tolerances for longer time periods if warranted. In addition, EPA may modify or extend a time-limited tolerance at any time on its own initiative or at the applicant's request. EPA has changed § 176.13 in the final rule to clarify that it may extend the duration of a tolerance for various reasons. EPA strongly recommends that if an applicant believes that 24 months is insufficient for a time-limited tolerance, the applicant should request a more appropriate length of time in the initial section 18 request. This will permit the Agency to judge whether a longer period would be appropriate.

One commenter noted that in the proposed regulatory text, the words ''unless extended'' should be added to § 176.11(b) to be consistent with the language in § 176.13. Section 176.11(b) states that ''(b) Tolerances will automatically expire and be revoked, without further action by EPA, at the time set out in the **Federal Register** notice establishing the tolerance.'' EPA agrees with this suggestion and has added the phrase to this section.

E. This Rulemaking Should Be Considered a ''Significant Action'' that Requires OMB Review

Two commenters disagreed with the determination that the proposed rule was not a ''significant regulatory action'' as defined under section 3(f) of Executive Order 12866, entitled *Regulatory Planning and Review* (58 FR 51735, October 4, 1993), and stated it should have therefore undergone review by the Office of Management and Budget (OMB), and that the final rule should be reviewed by OMB. One commenter stated that emergency exemptions are by definition ''of economic importance.'' In addition, crop losses associated with emergency exemptions are routinely multi-million dollar situations and that individual States and individual growers are ''significantly'' impacted by a cumbersome tolerance setting process. It was suggested that OMB review the potential impacts associated with delays in establishing tolerances.

E.O. 12866 defines as ''significant'' a regulatory action that is likely to:

1. Have an annual effect on the economy of $100 million or more, or adversely and materially affect a sector of the economy; productivity; competition; jobs; the environment; public health or safety; or State, local, or tribal governments or communities;
2. Create serious inconsistency or otherwise interfere with an action taken or planned by another agency;
3. Materially alter the budgetary impacts of entitlements, grants, user fees, or loan programs; or
4. Raise novel legal or policy issues.

The determination of whether or not a regulatory action should be reviewed by OMB under E.O. 12866 is made in consultation with OMB. Since this rule is a procedural rule that codifies the internal process by which EPA will set emergency tolerances, OMB determined that it was not a significant regulatory action that required OMB review under E.O. 12866. As stated in the proposal's preamble, EPA estimates that the direct cost of this rule will be minimal because only EPA and applicants are directly affected, and this action does not require applicants to submit new or additional information.

The Agency determined that this rule, once promulgated, is not expected to significantly change applicant activities, such that it would increase the current burden to applicants and therefore is unlikely to have a major economic impact on the States or Federal agencies that apply for section 18 exemptions. In addition, EPA affirms that promulgation of this rule will have no direct impact on any other sector of the economy, or on any other government entities, programs, or policies. A copy of the economic analysis is available in the public version of the official record for this rule (see Unit I.B.2.).

IV. Is a Tolerance Needed?

On October 27, 1999, EPA published in the **Federal Register** a notice of availability of a policy entitled, ''Threshold of Regulation Policy—Deciding Whether a Pesticide With a Food Use Pattern Requires a Tolerance'' (64 FR 57881) (FRL–6388–2). This policy pertains to the use of a pesticide (including an emergency use) on, in, or near food which does not result in residues that are detectable in food. EPA is adopting this policy which sets forth criteria to consider in evaluating whether there is no ''need'' to establish a tolerance, i.e., there is no reasonable expectation of finite residues of the pesticide in the food. If the criteria are met, there is no requirement for a tolerance or tolerance exemption. The Threshold of Regulation policy will be applicable for pesticide uses that result in no detected residues in food and for which the degree of potential risk posed by any theoretically possible residues is so minimal that tolerance setting serves no purpose.

The Threshold of Regulation Policy can apply to time-limited tolerances for section 18 emergency exemptions. In these instances, the Agency will consider surrogate data in the case of emergency exemption requests where all the data needed on the performance of the analytical method or the magnitude of the residue as determined by field trial studies on the subject commodity are unavailable. Given the emergency circumstances, EPA may consider accepting data from a different crop to establish eligibility for the threshold of regulation. Persons wishing a Threshold of Regulation policy decision should make the request in writing and submit materials and information that are ordinarily required to support time-limited tolerances or tolerance exemptions.

V. Regulatory Assessment Requirements

A. Executive Order 12866

Pursuant to Executive Order 12866, entitled *Regulatory Planning and*

Review (58 FR 51735, October 4, 1993), it has been determined that this action is not a ''significant regulatory action'' and is therefore not subject to review by OMB. OMB has made this determination because this final rule is a procedural rule that codifies the internal process by which EPA will set emergency tolerances. Applicants for section 18 emergency exemptions (i.e., Federal and State agencies) are the only parties, other than EPA, directly affected by this action. According to the economic assessment conducted by the Agency, the applicants of section 18 emergency exemptions are not expected to experience any adverse impacts as a result of this rule because the rule does not require any new or additional data from applicants.

A copy of the economic assessment is available in the public version of the official record for this rule (see Unit I.B.2.).

B. Regulatory Flexibility Act

Pursuant to section 605(b) of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq*.), the Agency hereby certifies that this regulatory action does not have a significant economic impact on a substantial number of small entities. Applicants for section 18 emergency exemptions are U.S. States, territories, or Federal agencies which, by definition, are not small entities under the RFA. Applicants for section 18 emergency exemptions are the only parties, other than EPA, directly affected by this action.

Information regarding this determination will be provided to the Chief Counsel for Advocacy of the Small Business Administration (SBA) upon request.

C. Paperwork Reduction Act

Pursuant to the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq*., an agency may not conduct or sponsor, and a person is not required to respond to, an information collection request unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations, after appearing in the preamble of the final rule, are listed in 40 CFR part 9 and 48 CFR chapter 15, and included on the related collection instrument. This regulatory action does not contain any new information collection requirements that would require additional OMB review and approval.

The information collection activities related to the procedures for emergency exemptions under section 18 of FIFRA, which are contained in 40 CFR part 166, are already approved by OMB under OMB control number 2070–0032 (EPA ICR No. 596), and the process and informational needs for requesting that the Agency establish or provide an exemption from the establishment of a tolerance or maximum-residue level for the use of a pesticide on food or feed crops, which are contained in 40 CFR part 180, are already approved by OMB under OMB control number 2070–0024 (EPA ICR No.597). As described in the information collection instruments, the annual respondent burden for the information collection activities in 40 CFR part 166 is estimated to average 103 hours per application, including time for reading the regulations, processing, compiling and reviewing the requested data, generating application correspondence or summary reports, and storing, filing, and maintaining the data. The annual respondent burden for the information collection activities in 40 CFR part 180 is estimated to average 1,726 hours per petition, including time for reading the regulations, processing, compiling and reviewing the requested data, generating the request, storing, filing, and maintaining the data.

As defined by the PRA and 5 CFR 1320.3(b), ''burden'' means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

D. Environmental Justice Considerations

This final rule does not involve special considerations of environmental-justice issues pursuant to Executive Order 12898, entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 FR 7629, February 16, 1994). The Agency has determined that this final rule does not affect the environmental and health conditions in low-income and minority communities because this rule codifies the internal process by which EPA will set emergency tolerances, and only applies to applicants for section 18 emergency exemptions (i.e., Federal and State agencies). In general, low-income and minority communities are more likely to benefit from the risk assessment process needed for the establishment of tolerances for section 18 actions that might impact their community.

E. Unfunded Mandates Reform Act

Under Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Public Law 104–4), EPA has determined that this action does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any 1 year. As applicants for section 18 emergency exemptions, Federal and State agencies are the only parties, other than EPA, directly affected by this action. The potential impact on State agencies, however, is expected to be minimal because this action does not require applicants to submit new or additional information. In addition, EPA has determined that this rule does not significantly or uniquely affect small governments. Accordingly, this action is not subject to the requirements of sections 202, 203, 204, and 205 of UMRA.

F. Federalism

Executive Order 13132, entitled *Federalism* (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' This final rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Since this rule codifies an internal process for the Agency, and does not impose requirements on others, the Agency determined that this rule will not adversely impact the entities that apply for section 18 exemptions. The process established by this final rule will more likely benefit applicants and others by establishing an effective and efficient process for the Agency to take the necessary tolerance actions in a timely manner. Thus, the requirements of section 6 of the Executive Order do not apply to this rule. Nevertheless, the Agency provided an opportunity for Federal and State agencies to review and provide comments on the proposed process. A discussion of the comments EPA received, which includes comments from several State and local officials, and how those comments are addressed in the final rule, is provided in Unit III.

G. Consultation and Coordination with Indian Tribal Governments

Under Executive Order 13084, entitled *Consultation and Coordination with Indian Tribal Governments* (63 FR 27655, May 19,1998), EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. This final rule implements requirements specifically set forth by the Congress in FFDCA section 408(l)(6) without the exercise of any discretion by EPA. The final rule does not significantly or uniquely affect the communities of Indian tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this final rule.

H. Children's Health Protection

This final rule is not subject to Executive Order 13045, entitled *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997), because this is not an economically significant regulatory action as defined by Executive Order 12866 (see Unit V.A.). In addition, this final rule is procedural in nature and does not involve decisions on environmental health or safety risks that may disproportionately affect children.

I. National Technology Transfer and Advancement Act

This regulatory action does not involve any technical standards that would require Agency consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272 note). Section 12(d) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices, etc.) that are developed or adopted by voluntary consensus standards bodies. The NTTAA requires EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

J. Civil Justice Reform

In issuing this rule, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct, as required by section 3 of Executive Order 12988, entitled *Civil Justice Reform* (61 FR 4729, February 7, 1996).

K. Constitutionally Protected Property Rights

EPA has complied with Executive Order 12630, entitled *Governmental Actions and Interference with Constitutionally Protected Property Rights* (53 FR 8859, March 15, 1988), by examining the takings implications of this rule in accordance with the ''Attorney General's Supplemental Guidelines for the Evaluation of Risk and Avoidance of Unanticipated Takings'' issued under the Executive Order.

VI. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 176

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: October 16, 2000.

Carol M. Browner,

Administrator.

Therefore, 40 CFR chapter I is amended by adding new part 176 to read as follows:

PART 176—Time-Limited Tolerances for Emergency Exemptions

Authority: 21 U.S.C. 346a and 371.

§ 176.1 Scope and applicability.

This part describes the procedures and criteria under which EPA will establish time-limited tolerances and exemptions from the requirement of a tolerance for pesticide chemical residues associated with use of pesticides under emergency or crisis exemptions under FIFRA section 18. This part applies only to tolerances issued on the initiative of EPA as the result of the issuance of an emergency exemption or the declaration of a crisis exemption. This part does not cover time-limited tolerances in any other circumstances.

§ 176.3 Definitions.

The terms have the same meaning as in the Federal Insecticide, Fungicide, and Rodenticide Act section 2, and in the Federal Food, Drug, and Cosmetic Act section 201 and § 166.3 of this chapter. In addition, the following terms are defined for the purposes of this part.

Agency means the U.S. Environmental Protection Agency.

Applicant means any entity authorized under section 18 of FIFRA to request an emergency exemption that requests such an exemption under § 166.20 of this chapter, or issues a crisis exemption under § 166.40 of this chapter.

Crisis exemption means an exemption authorized under FIFRA section 18, in accordance with § § 166.40 through 166.53 of this chapter.

Emergency exemption means a specific, quarantine, or public health exemption authorized under FIFRA section 18 and the regulations at § § 166.20 through 166.35 of this chapter.

EPA means the U.S. Environmental Protection Agency.

FFDCA means the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321 *et seq.*).

FIFRA means the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C 136 *et seq.*).

Tolerance means the maximum amount of a pesticide chemical residue that may lawfully be present in or on a raw agricultural commodity, or processed food, or animal feed, expressed as parts per million by weight of the pesticide chemical residue in the food or feed.

Tolerance exemption means a formal determination by the Agency pursuant to FFDCA section 408(c), 21 U.S.C 346a(c), that no tolerance is needed for a given pesticide chemical residue in or on a particular food commodity. For purposes of this part, the term ''tolerance'' shall include an exemption from the requirement of a tolerance.

§ 176.5 Establishment of a time-limited tolerance or exemption.

EPA will establish a time-limited tolerance for pesticide chemical residues in or on raw or processed food or feed resulting from the use of a pesticide chemical, if EPA authorizes an emergency exemption or a crisis exemption. EPA will consider establishing such a tolerance only if an applicant acting under authority of FIFRA section 18 either has requested an emergency exemption, has stated its intention to issue a crisis exemption, or has issued a crisis exemption for a use that may result, directly or indirectly, in pesticide chemical residues in food or feed.

§ 176.7 Information needed to establish a tolerance.

(a) EPA will establish a time-limited tolerance only if EPA can determine that the tolerance is safe, that is, there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue. EPA will base its determination upon data submitted by the applicant and other readily available data. If, taking into account the limited duration and emergency nature of a section 18 application, and based on the available data the Agency cannot conclude that there is a reasonable certainty that no harm will result from the use proposed by the applicant or granted pursuant to a crisis exemption, EPA will not establish a tolerance.

(b) Data and other relevant information to support the establishment of a time-limited tolerance may be submitted by the applicant, or by any other person, in support of the time-limited tolerance. The applicant may also cite relevant data previously submitted to the Agency.

§ 176.9 Publication of a tolerance.

(a) If EPA issues an emergency exemption or crisis exemption under FIFRA section 18, and EPA concludes that the tolerance for residues resulting from use of the pesticide under the exemption will be safe, then EPA will establish the tolerance by publishing an amendment to 40 CFR part 180 in the **Federal Register**.

(b) A tolerance under this part may be established without prior publication of a proposed tolerance or comment period.

§ 176.11 Duration of a tolerance.

(a) Tolerances issued under this part will become effective upon publication in the **Federal Register**, unless otherwise specified by the Administrator.

(b) Unless extended, tolerances will automatically expire and be revoked, without further action by EPA, at the time set out in the final rule published in **Federal Register**.

(c) The Administrator may revoke a tolerance at any time if the Administrator determines that the tolerance is no longer safe.

§ 176.13 Modification of a time-limited tolerance.

If additional emergency or crisis exemptions are authorized that would extend use beyond the date originally authorized, or if EPA determines that the duration of a time-limited tolerance is insufficient to allow treated commodities to clear the channels of trade, EPA may modify the time-limited tolerance by publication of a final rule in the **Federal Register**. EPA will use the same criteria and procedures for modification as for establishing tolerances under this part.

§ 176.15 Effect of a tolerance.

The establishment of a tolerance under this part does not alter the requirement that any applicant comply with procedures established in part 166 of this chapter for emergency exemptions of FIFRA.

[FR Doc. 00–27405 Filed 10–24–00; 8:45 am]

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At the end of each month, the Office of the Federal Register publishes separately a List of CFR Sections Affected (LSA), which lists parts and sections affected by documents published since the revision date of each title.

REMINDERS

The items in this list were editorially compiled as an aid to Federal Register users. Inclusion or exclusion from this list has no legal significance.

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To increase the amount of fees charged to employers who are petitioners for the employment of H-1B non-immigrant workers, and for other purposes. (Oct. 17, 2000; 114 Stat. 1247)

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To amend the Immigration and Nationality Act with respect to H-1B nonimmigrant aliens. (Oct. 17, 2000; 114 Stat. 1251)

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