AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

1–3–94
Vol. 59 No. 1

federal register

Monday
January 3, 1994

United States
Government
Printing Office
SUPERINTENDENT
OF DOCUMENTS
Washington, DC 20402

OFFICIAL BUSINESS
Penalty for private use, $300

SECOND CLASS NEWSPAPER

Postage and Fees Paid
U.S. Government Printing Office
(ISSN 0097–6326)

1–3–94
Vol. 59 No. 1
Pages 1–240

federal register

Monday
January 3, 1994

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WHY: To provide the public with access to information necessary to research Federal agency regulations which directly affect them. There will be no discussion of specific agency regulations.

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Presidential Documents

Title 3—

The President

Presidential Determination No. 94–7 of December 18, 1993

Drawdown of Commodities and Services From the Inventory and Resources of the Department of Defense To Maintain Egypt's Military Readiness and Security

Memorandum for the Secretary of State [and] the Secretary of Defense

Pursuant to the authority vested in me by section 552(c)(2) of the Foreign Assistance Act of 1961, as amended, 22 U.S.C. 2348a(c)(2) (the "Act"), I hereby determine that:

(1) as a result of an unforeseen emergency, the provision of assistance under Chapter 6 of Part II of the Act in amounts in excess of funds otherwise available for such assistance is important to the national interests of the United States; and

(2) such unforeseen emergency requires the immediate provision of assistance under Chapter 6 of Part II of the Act.

I therefore direct the drawdown of commodities and services from the inventory and resources of the Department of Defense of an aggregate value not to exceed $13.5 million to maintain Egypt's military readiness and security in view of the dedication of Egyptian resources to the United Nations Operations in Somalia (UNOSOM II).

The Secretary of State is authorized and directed to report this determination to the Congress and to arrange for its publication in the **Federal Register**.

William J. Clinton

THE WHITE HOUSE,
Washington, December 18, 1993.

[FR Doc. 93–32104
Filed 12–29–93; 2:14 pm]
Billing code 4710–01–M

Rules and Regulations

Federal Register
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This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each week.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 92–ANE–08; Amendment 39–8781; AD 93–25–17]

Airworthiness Directives; General Electric CT7 Series Turboprop and Turboshaft Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to General Electric (GE) CT7 series turboprop and turboshaft engines. This proposal would require the removal from service of certain gas generator turbine (GGT) rotor assembly parts that were plasma-sprayed during manufacture. This amendment is prompted by material testing that indicates that the plasma-spray process reduces the low cycle fatigue (LCF) capability of the material. The actions specified by this AD are intended to prevent fatigue cracks that can result in uncontained engine failure.

DATES: Effective February 2, 1994.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register, as of February 2, 1994.

ADDRESSES: The service information referenced in this AD may be obtained from General Electric Aircraft Engines, 1000 Western Avenue, Lynn, Massachusetts 01910. This information may be examined at the FAA, New England Region, Office of the Assistant Chief Counsel, Attn: Rules Docket No. 92–ANE–08, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC 20001.

FOR FURTHER INFORMATION CONTACT: Barbara G. Caufield, Aerospace Engineer, Engine Certification Branch, ANE–141, Engine Certification Office, FAA, New England Region, Engine and Propeller Directorate, Aircraft Certification Service, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; telephone (617) 238–7146; fax (617) 238–7199.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations to include an airworthiness directive (AD) that is applicable to General Electric CT7 series turboprop and turboshaft engines was published in the **Federal Register** on November 13, 1992 (57 FR 53862). That action proposed to require the removal from service of certain gas generator turbine (GGT) rotor assembly parts that were plasma-sprayed during manufacture, and replacement with serviceable parts. The actions would be required to be accomplished in accordance with GE CT7 Turboprop Service Bulletin (SB) A72–252, dated August 31, 1990; and GE CT7 Turboshaft SB A72–17 and SB A72–18, both dated September 10, 1990.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

One commenter supports the rule as proposed.

One commenter observes that the economic analysis in the proposed AD is based on 23 engines being affected by the AD, when, in fact, there are only 11 engines containing a combination of 23 parts. The FAA concurs. The wording of the economic analysis for the final rule has been changed accordingly.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

The FAA estimates that 11 engines (containing 23 affected parts) installed on aircraft of U.S. registry will be affected by this AD, that it will take approximately 7 work hours per engine to accomplish the required actions, and that the average labor rate is $55 per work hour. Required parts will cost approximately $8,255 per engine. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $95,040. The manufacturer has advised the FAA that a pro-rata credit allowance will be granted for labor and parts required to accomplish these removals and replacements at a GE authorized service or overhaul facility. Based on this information, the FAA has determined that the total cost impact of the AD on U.S. operators would be approximately $5,940 ($540 per engine).

The regulations adopted herein 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 14 CFR part 39 of the Federal Aviation Regulations as follows:

PART 39—AIRWORTHINESS DIRECTIVES

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

Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

§ 39.13 [Amended]

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

93–25–17. General Electric: Amendment 39–8781. Docket No. 93–ANE–08.

Applicability: General Electric (GE) Models CT7–5A2, –7A, and –9C Turboprop Engines; and Models CT7–2A, and –6 Turboshaft Engines, incorporating gas generator turbine (GGT) disks and cooling plates, as listed by Part Number (P/N) and Serial Number (S/N) in GE CT7 Turboprop Service Bulletin (SB) A72–252, dated August 31, 1990; GE CT7 Turobshaft SB A72–17, and GE CT7 Turboshaft SB A72–18, both dated September 10, 1990, installed on, but not limited to, Saab 340A, Casa CN235–10, Bell 214ST, and European Helicopter Industries EH101.

Compliance: Required as indicated, unless accomplished previously.

To prevent fatigue cracks that can result in uncontained engine failure, accomplish the following:

(a) Remove from service the affected GE Model(s) CT7–5A2, –7A, and –9C engines GGT rotor stage 1 and 2 disks, and stage 2 forward and aft cooling plates, prior to exceeding the "Max total allowable cycles"; as listed in GE CT7 Turboprop SB A72–252, dated August 31, 1990, and replace with serviceable parts.

(b) Remove from service the affected GE Model(s) CT7–6 engine GGT rotor stage 1 disk and stage 2 forward cooling plate prior to exceeding the "Max total allowable cycles"; as listed in GE CT7 Turboprop SB A72–17, dated September 10, 1990, and replace with serviceable parts.

(c) Remove from service the affected GE Model(s) CT7–2A engine GGT rotor stage 2 disk and stage 2 forward cooling plate prior to exceeding the "Max total allowable cycles"; as listed in GE CT7 Turboshaft SB A72–8, dated September 10, 1990, and replace with serviceable parts.

(d) 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. The request should be forwarded through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

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

(e) Special flight permits may be issued, in accordance with FAR 21.197 and 21.199, to operate the airplane to a location where the requirements of this AD can be accomplished.

(f) The removals and replacements of the affected rotor stage disks and cooling plates shall be done in accordance with the following service bulletins:

Document No.	Page No.	Issue	Date
GE CT7 Turboprop SB A72–252	1–13	Original	Aug 31, 1990
Total pages: 13			
GE CT7 Turboshaft SB A72–17	1–4	Original	Sep 10, 1990
Total pages: 4			
GE CT7 Turboshaft SB A72–18	1–4	Original	Sep 10, 1990
Total pages: 4			

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 General Electric Aircraft Engines, 1000 Western Avenue, Lynn, Massachusetts 01910. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, Attn: Rules Docket No. 92–ANE–08, 12 New England Executive Park, Burlington, Massachusetts; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

(g) This amendment becomes effective on February 2, 1994.

Issued in Burlington, Massachusetts, on December 21, 1993.

Jay J. Pardee,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 93–31908 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–13–P

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14 CFR Part 39

[Docket No. 93–ANE–71; Amendment 39–8780; AD 93–25–16]

Airworthiness Directives; Allied-Signal Aerospace Company, Garrett Engine Division, TFE731 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule, request for comments.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to Allied-Signal Aerospace Company, Garrett Engine Division, TFE731 series turbofan engines, that currently requires an improved, more definitive eddy current inspection, and replacement, if necessary, of certain fan disks for cracks. This amendment requires an additional 30 fan disks to be inspected. This amendment is prompted by the examination of fan disk eddy current inspection tapes using more definitive inspection criteria. The actions specified by this AD are intended to prevent an uncontained fan disk failure.

DATES: Effective January 18, 1994.

The incorporation by reference of Allied-Signal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, is approved by the Director of the **Federal Register** as of January 18, 1994.

The incorporation by reference of Allied-Signal Aerospace Company, Garrett Engine Division, ASB No. TFE731–A72–3504, dated November 25, 1992, was approved previously by the Director of the **Federal Register** as of April 9, 1993 (58 FR 16113, March 25, 1993).

Comments for inclusion in the Rules Docket must be received on or before March 4, 1994.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 93–ANE–71, 12 New England Executive Park, Burlington, MA 01803–5299.

The service information referenced in this AD may be obtained from AlliedSignal Engines, Aviation Services Division, Data Distribution, Dept. 64–3/2102–1M, P.O. Box 29003, Phoenix, AZ 85038–9003; telephone (602) 365–2548. This information may be examined at the FAA, New England Region, Office of the Assistant Chief Counsel, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Joseph Costa, Aerospace Engineer, Los Angeles Aircraft Certification Office, FAA, Transport Airplane Directorate, 3229 East Spring Street, Long Beach, CA 90806–2425; telephone (310) 988–5246, fax (310) 988–5210.

SUPPLEMENTARY INFORMATION: On February 19, 1993, the Federal Aviation Administration (FAA) issued AD 92–26–09, Amendment 39–8503 (58 FR 16113, March 25, 1993), to require an improved, more definitive eddy current inspection of certain fan disks for cracks, and replacement, if necessary, of these fan disks. That action was prompted by reports of an uncontained

failure of a fan disk on an Allied-Signal Aerospace Company, Garrett Engine Division, Model TFE731–3 turbofan engine. The FAA investigation determined that a fatigue crack originated in the aft acute corner of the dovetail slot. The fan disk had accumulated a total of 5291 cycles in service (CIS) at the time of the failure, and had been eddy current inspected in 1990 when the disk had accumulated 4055 CIS. The fan disk displayed evidence of broaching grooves produced during the manufacture of the blade dovetail slots. These machining grooves may have contributed to the disk failure. From a metallurgical analysis, the FAA has determined that the failed fan disk had dovetail cracks which were not detected at the time of the eddy current inspection. A review of the eddy current inspection process used to inspect this disk and all disks inspected prior to May 1991 revealed that the process will not reliably detect this type of crack on these disks. Fan disk cracks, if not detected, could result in an uncontained fan disk failure.

Since the issuance of that AD, the FAA has determined that an additional 30 fan disks will require inspection, or replacement, if necessary. In addition, the Applicability Section of AD 92–26–09 identified the Learjet 55 series as one aircraft that might have an affected engine installed. The FAA has since learned that no Learjet 55 series aircraft has an affected engine, and therefore, deletes the Learjet 55 series from that list of aircraft. Finally, AlliedSignal Propulsion Engines has issued Revision 1 to AlliedSignal Propulsion Engines Alert Service Bulletin (ASB) No. TFE731–A72–3504. This AD incorporates this revision.

The FAA has reviewed and approved the technical contents of Allied-Signal Aerospace Company, Garrett Engine Division, ASB No. TFE731–A72–3504, dated November 25, 1992, and AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, that describe procedures for an improved, more definitive eddy current inspection of these fan disks for cracks.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD supersedes AD 92–26–09 to require inspection of an additional 30 fan disks. Fan disks inspected in accordance with the existing AD, 92–26–09, need not be inspected again. The inspection schedule for fan disks not yet inspected in accordance with the existing AD, however, remains the same, using April 9, 1993, the effective date of AD 92–26–09 as the starting point. The actions are required to be accomplished in accordance with the service bulletins described previously.

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 notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 93–ANE–71." The postcard will be date stamped and returned to the commenter.

The regulations adopted herein 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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, Incorporation by reference, Safety.

Adoption of the Amendment

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

PART 39—AIRWORTHINESS DIRECTIVES

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

Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing Amendment 39–8503, (58 FR 16113, March 25, 1993), and by adding a new airworthiness directive, Amendment 39–8780, to read as follows:

93–25–16 Allied-Signal Aerospace Company, Garrett Engine Division: Amendment 39–8780. Docket 93–ANE–71. Supersedes AD 92–26–09, Amendment 39–8503.

Applicability: Allied-Signal Aerospace Company, Garrett Engine Division, TFE731–2, –3, and –3R series turbofan engines installed on but not limited to Sabreliner NA–265–65 (Sabreliner 65); Israel Aircraft Industries 1124 series (Westwind); Avions Marcel Dassault Falcon 10, 50, 100 series; Learjet 35, 36, and 31 (M31) series; British Aerospace BAe HS125 series; and Lockheed 1329–23, –25 series (731 Jetstar, Jetstar II) aircraft.

Compliance: Required as indicated, unless accomplished previously.

To prevent an uncontained fan disk failure, accomplish the following:

(a) For all disks previously eddy current inspected in accordance with the requirements of AD 92–26–09, no further action is required.

(b) Remove prior to further flight fan disk Part Number (P/N) 3073539–2 or 3072162–2 with Serial Number (S/N) 8–18040–6300, in accordance with Allied-Signal Aerospace Company, Garrett Engine Division, Alert Service Bulletin (ASB) No. TFE731–A72–3504, dated November 25, 1992, or AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, and replace with a serviceable disk.

(c) Eddy current inspect fan disks, P/N 3072162–1 through –4, 3073436–1 through –4, 3073539–2, and 3074529–2, in accordance with Allied-Signal Aerospace Company, Garrett Engine Division, ASB No. TFE731–A72–3504, dated November 25, 1992, or AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, and if necessary, replace with a serviceable disk, as follows:

(1) For fan disks listed by S/N in Table 2 of Allied-Signal Aerospace Company, Garrett Engine Division, ASB No. TFE731–A72–3504, dated November 25, 1992, or AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, inspect, and if necessary, replace with a serviceable disk within 50 cycles in service (CIS) after April 9, 1993 (effective date of AD 92–26–09).

(2) For the 10 added fan disks listed by S/N in Table 3 of AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, with 5000 or more CIS since new on the effective date of this AD, inspect, and if necessary, replace with a serviceable disk, within the next 50 CIS after the effective date of this AD.

(3) For fan disks listed by S/N in Table 3 of AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, other than the 10 added fan disks, with 5000 or more CIS since new on April 9, 1993, (effective date of AD 92–26–09), inspect, and if necessary, replace with a serviceable disk, within the next 50 CIS after April 9, 1993 (effective date of AD 92–26–09).

(4) For the 10 added fan disks listed by S/N in Table 3 of Allied-Signal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, with less than 5000 CIS since new on the effective date of this AD, inspect, and if necessary, replace with a serviceable disk within the next 100 CIS after the effective date of this AD, or prior to accumulating 5050 CIS since new, whichever occurs first.

(5) For fan disks listed by S/N in Table 3 of AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, other than the 10 added fan disks, with less than 5000 CIS since new on April 9, 1993, (effective date of AD 92–26–09], inspect, and if necessary, replace with a serviceable disk, within the next 100 CIS after April 9, 1993 (effective date of AD 92–26–09), or prior to accumulating 5050 CIS since new, whichever occurs first.

(6) For fan disks listed by S/N in Table 4 of Allied-Signal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, inspect, and if necessary, replace with a serviceable disk, within the next 100 CIS after the effective date of this AD.

(d) 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, Los Angeles Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles Aircraft Certification Office.

Note: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Los Angeles Aircraft Certification Office.

(e) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate the aircraft to a location where the requirements of this AD can be accomplished.

(f) The inspection, and replacement, if necessary, shall be done in accordance with the following service documents:

Document No.	Pages	Revision	Date
Allied-Signal Propulsion Engines ASB No. TFE731-A72–3504 ..... Total pages: 28..	1–28	1	July 2, 1993.
Allied-Signal Aerospace Company, Garrett Engine Division, ASB No. TFE731-A72–3504. Total pages: 24..	1–24	Original	November 25, 1992.

The incorporation by reference of AlliedSignal Propulsion Engines ASB No. TFE731–A72–3504, Revision 1, dated July 2, 1993, is approved by the Director of the **Federal Register** in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The incorporation by reference of Allied-Signal Aerospace Company, Garrett Engine Division, ASB No. TFE731–A72–3504, dated November 25, 1992, was approved previously by the Director of the **Federal Register** in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 as of April 9, 1993 (58 FR 16113, March 25, 1993). Copies may be obtained from AlliedSignal Engines, Aviation Services Division, Data Distribution, Dept. 64–3/2102–1M, P.O. Box 29003, Phoenix, AZ 85038–9003; telephone (602) 365–2548. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the **Federal Register**, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on January 18, 1994.

Issued in Burlington, Massachusetts, on December 21, 1993.

Jay J. Pardee,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 93–31907 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF COMMERCE

National Technical Information Service

15 CFR Part 1180

[Docket No. 921242–3202]

RIN 0692–AA12

Transfer by Federal Agencies of Scientific, Technical and Engineering Information to the National Technical Information Service

AGENCY: National Technical Information Service, Technology Administration, Commerce.

ACTION: Final rule.

SUMMARY: This final rule establishes procedures for federal agencies to transfer unclassified scientific, technical and engineering information resulting from federally funded research and development activities to the National Technical Information Service. This rule is issued pursuant to the American Technology Preeminence Act of 1991. Its purpose is to facilitate public access to the vast amount of scientific, technical and engineering information that is produced by and for federal agencies.

EFFECTIVE DATE: This regulation is effective February 1, 1994.

FOR FURTHER INFORMATION CONTACT: Donald W. Corrigan (703) 487–4636.

SUPPLEMENTARY INFORMATION: On May 11, 1993, the National Technical Information Service (NTIS) published a proposed rule (58 FR 27681) to implement Section 108 of the American Technology Preeminence Act (ATPA) of 1991 (Pub. L. 102–245). Section 108 of the ATPA requires all federal agencies to submit to NTIS in a timely manner unclassified scientific, technical and engineering information (STEI) resulting from federally funded research and

development activities. This final rule establishes procedures for employees of agencies to follow and those contractors and grantees who are authorized by agencies to transfer products directly to NTIS.

These regulations should significantly expand NTIS' collection of more than two million printed reports and documents, videotapes, computer software and computerized data files on tape, diskette, and CD–ROM. Such information can be purchased from NTIS by the research and development community, business, and the general public. This expansion should significantly improve public access to STEI and contribute to NTIS's ability to operate on a self-sustaining basis without appropriations.

The major features of these regulations include (a) a system of "affiliates" to serve as NTIS agents to receive information on behalf of NTIS; (b) a system of federal agency "liaisons" to work with NTIS to ensure cost-effective compliance; (c) an optional system by which agencies may allow their contractors and grantees to transfer information directly to NTIS; (d) an optional system by which agencies may allow NTIS to ride their production orders; (e) a method for granting waivers if transfer of STEI products would be inappropriate; and (f) a requirement that certain copyright information be provided to NTIS so that it does not inadvertently make available a product for which the Government lacks appropriate dissemination rights.

A number of technical and clarifying changes have been made to the proposed regulations, most of which are intended to make it clearer that certain provisions are optional at the discretion of individual agencies. The most important amendment alerts agencies that compliance with these procedures in no way relieves them of their responsibilities for distributing publications to the Depository Library Program established by Chapter 19 of Title 44 of the United States Code and establishes a procedure through which NTIS can assist agencies in meeting that responsibility with respect to STEI submitted to NTIS under this regulation.

Comments and Decisions

A number of comments involved inquiries relating to internal NTIS processes or procedures of the commenting agency and did not propose specific changes to the regulation. They are included in this section to the extent they raise matters of general interest.

General Comments

Comment: Authors should clear publications printed by contractors and grantees prior to public dissemination.

NTIS Response: These regulations apply only to products that are available for public dissemination. How that determination is made is up to individual agencies and is beyond the scope of the ATPA and these regulations.

Comment: The regulations do not appear to take into account that some government-funded research products may be published in professional journals and other publications produced by the private sector or that some STEI produced by non-federal employees may be protected by copyright.

NTIS Response: Section 1180.7(a) of the final regulations now explicitly states that agencies are not required to take any action to transfer to NTIS agency generated articles published in privately produced journals or federally funded STEI for which no license permitting distribution by NTIS has been reserved to the Government. Both categories had been included in § 1180.7(b) as examples of potentially inappropriate transfers, so no significant substantive change is intended.

Comment: NTIS and the Government Printing Office should exchange electronic bibliographic records to facilitate bibliographic control activities.

NTIS Response: The recommendation, if implemented, should provide the customers of each agency with enhanced ability to find and order government information. NTIS will be pleased to discuss an exchange of tapes with the Superintendent of Documents at any time.

Section 1180.2

Comment: The definition of "agency" permits certain subunits of the parent agency to deal directly with NTIS and bypass the cabinet officer above them.

NTIS Response: To ensure general consistency with other Technology Administration programs, the final regulations adopt the definition of "federal agency" employed in the Stevenson-Wydler Technology Innovation Act of 1980. However, NTIS recognizes that this definition contributes to the problem described in the comment at least insofar as it specifically identifies the military departments as agencies even though they are part of the Department of Defense, which is itself an agency within the meaning of that Act. Accordingly, the final regulations include a statement in section 1180.11 ("Relation to Other Laws and Procedures") clarifying that agencies that are subunits of other agencies must comply with the procedures of the parent agency. NTIS will not deal directly with these subunits as freestanding agencies except as approved by the parent.

Comment: By referring to STEI "which results from federally funded research and development activities" in the definition of the phrase "federally funded," the regulation may be interpreted to refer only to products generated under R&D funding categories.

NTIS Response: The quoted language appears in section 108 of the ATPA and nothing in that section suggests a narrow reading that conditions the requirement on technical funding categories.

Comment: The definition of "final" should not automatically exclude interim STEI reports as they often contain valuable information and the final report may not be issued for some time.

NTIS Response: The definition of "final" in section 1180.2 has been modified to indicate that such reports may be transferred.

Comment: The definition of "product" should not include software because that would unduly disrupt the agency's software distribution mechanism.

NTIS Response: Section 108 of the ATPA expressly refers to software and NTIS cannot read that out of the statute. Section 1180.7 contains a procedure for exempting products or categories of products in appropriate cases, such as harm to a dissemination program.

Comment: The definition of STEI is too broad in that it sweeps in significant amounts of business-related information.

NTIS Response: The definition of STEI is not intended to cover all business-related information. The second part of the definition is obtained from a 1954 Comptroller General opinion (34 Comp. Gen. 58) construing the Act of September 9, 1950, 64 Stat. 823, as amended (15 U.S.C. 1151 et seq.), which required the Secretary of Commerce to maintain a clearinghouse for the collection and dissemination of STEI. According to the opinion, "technical information" can embrace matters beyond the restricted field of applied science and mechanical arts. However, the definition in the Comptroller General opinion should itself be read as limited to information which has a *direct* relationship to business, industry or technology. Also, the second part of the definition in the

rule limits STEI to information that would be of value to consumers of scientific or engineering information, as determined by the agency transferring the information. Most importantly, NTIS will work with liaison officers to ensure that the results of applying the definition under this rule are not burdensome to agencies or to NTIS.

Section 1180.4

Comment: The requirement that product formats conform to NTIS guidelines is burdensome.

NTIS Response: The guidelines simply catalog existing formats in order of preference by NTIS. However, they are only guidelines, not requirements. The language has been modified to make it clearer that the formats are to be used to the extent practicable.

Comment: The requirement to advise NTIS of the terms of copyright licenses reserved to the Government are unnecessary because some agencies surrender all rights in exchange from royalty-free government purpose rights.

NTIS Response: The regulation in no way tells agencies what rights they should or should not retain. Agency practices vary and the regulation is simply intended to ensure that nothing is transferred to NTIS that NTIS is precluded from disseminating because the Government lacks appropriate dissemination rights.

Note: Section 1180.4(a) also contains a new paragraph relating to material not printed by the Government Printing Office. The purpose of this addition is explained more fully in the analysis of comments pertaining to § 1180.11.

Section 1180.5

Comment: The regulation requires final STEI products to be submitted within fifteen days of public dissemination but is silent as to when summaries of new and on-going research described in section 1180.3 is to be submitted.

NTIS Response: The final regulation clarifies that the fifteen day requirement also pertains to unclassified research summaries that have been made available for public dissemination through any distribution channel.

Comment: Transfer within fifteen days of public dissemination may be impractical or inappropriate.

NTIS Response: Providing NTIS with a copy of a product two weeks after it has been made available for public dissemination is not unreasonable and reflects the direction in section 108 of the ATPA that federal agencies transfer covered materials in a timely manner.

Section 1180.6

Comment: The size and scope of the agency's programs make it difficult to give NTIS pre-production notice so as to allow it to ride printing orders.

NTIS Response: Section 1180.6 has been slightly modified to make it clear that this procedure is permissive and need not be used by agencies that conclude that it would be unduly burdensome.

Comment: The regulation should exempt the commenting agency from the requirement to allow NTIS to ride its production orders for security reasons.

NTIS Response: Section 1180.6 has been modified to clarify that this requirement is not mandatory. However, agencies that do not use this method must find alternative means of ensuring that NTIS receives copies of all products required to be transferred.

Comment: NTIS should work with the commenting agency to ride its printing requisitions and make arrangements to share costs recovered from the dissemination of products.

NTIS Response: NTIS will consider all appropriate proposals from agencies to achieve these purposes.

Section 1180.7

Comment: The regulation should not apply to STEI products available through the Government Printing Office.

NTIS Response: NTIS has a statutory mandate to maintain an STEI information clearinghouse, to establish and maintain a permanent repository of unclassified STEI, and to operate on a cost recovery basis without recourse to appropriations. NTIS achieves these different objectives by maintaining a comprehensive collection that is of particular value to business and other consumers who want access to a broad range of materials in and out of print, who want them quickly, and to whom time spent shopping in various places is a significant cost. The practical effect of this suggestion would be to reduce the value of NTIS' collection and essentially leave it with those unprofitable items that GPO cannot sell. The enactment of Section 108 of the ATPA suggests that Congress wanted to strengthen, not weaken, NTIS' ability to serve the needs of STEI users and industry and to operate on a self-sustaining basis.

Comment: This section inappropriately allows NTIS to overrule agency decisions as to whether information ought to be released and to overrule agency decisions to use dissemination channels other than NTIS.

NTIS Response: The regulation leaves discretion to agencies to determine whether information should be released. The regulation expressly disclaims the intent to preclude agencies from also using other channels (Section 1180.11(b)). However, the regulation does preclude agencies from unilaterally bypassing NTIS when the agency has decided that the information should be disseminated. It is expected that agencies and NTIS will negotiate cooperatively to identify products or classes of products that the agency intends to make available through channels other than NTIS.

Comment: Provisions calling for agreement between the agency head and NTIS regarding alternative methods of compliance or whether transfers would be inappropriate are issues that should be in the sole discretion of the agency.

NTIS Response: NTIS has an obligation to ensure that the basic requirements of the American Technology Preeminence Act are satisfied and does not believe that agencies can unilaterally exempt themselves from its provisions. NTIS will work closely with agency liaisons to resolve problems that may from time to time arise. However, as noted above, the basic issue of whether a product should be publicly disseminated is up to the agency and is unaffected by Section 1180.7.

Comment: The regulation should specifically exempt the commenting agency's ongoing research because national security concerns preclude public dissemination.

NTIS Response: The regulations apply only to unclassified information and only to information intended for public dissemination.

Section 1108.8

Comment: A reference in § 1180.8(a)(1) to items produced at Government facilities should be changed to refer to items produced by the Government as the latter is more inclusive and production site is largely irrelevant.

NTIS Response: NTIS has made the suggested change.

Comment: To preclude proliferation of affiliates within an agency, the concurrence of an agency's initial and primary affiliate should be required before additional affiliates are appointed.

NTIS Response: Section 1180.8 has been amended to adopt this recommendation.

Comment: A commenting agency requested that the regulation explicitly designate it as an affiliate.

NTIS Response: NTIS will designate a number of affiliates over time. Designating them by regulation is

impractical. NTIS expects that the Department of Energy's Office of Scientific and Technical Information, the Department of Defense's Defense Technical Information Center and the National Aeronautics and Space Administration's Scientific and Technical Information Office will be among those organizations initially designated as affiliates by NTIS.

Section 1180.11

Comment: This section should be expanded to clarify the relation of the regulation to a number of other laws and procedures relating to the release, protection, and dissemination of Government information, such as the Freedom of Information Act, requirements to protect certain sensitive material, and requirements to make information available for distribution to Depository Libraries (which issue is discussed in more detail in the following comments).

NTIS Response: NTIS has made the suggested changes and has reorganized § 1180.4 to reflect them more clearly.

Comment: To ensure compliance with agency clearance procedures, the regulation should specify for certain agencies the identity of the offices that are required to approve direct transmissions of STEI products to NTIS by contractors, grantees, and employees.

NTIS Response: NTIS has concluded that the identification of an agency's appropriate clearance officials should be left to individual agencies through their internal procedures and should not be covered by NTIS regulations. The final regulation does not adopt this recommendation but NTIS has modified the proposed regulation to delete the one specific reference that had been included.

Comment: The regulation will weaken the effectiveness of the Depository Library (DL) Program if agencies erroneously assume that STEI products submitted to NTIS will automatically be supplied to the Libraries by NTIS. Various recommendations were made, such as clarifying that submission to NTIS in no way relieved agencies of their obligations to provide documents to the Libraries or requiring NTIS to make such products available to the Libraries on behalf of the originating agencies.

NTIS Response: NTIS has added new provisions that (1) reemphasize agency responsibilities for compliance with all DL requirements (Section 1180.11(a)(5)); (2) provide DL's with information about new products added to NTIS' inventory (Section 1180.11(d) (1)–(2)); and (3) establish a procedure through which NTIS can assist agencies in meeting their DL requirements with respect to STEI submitted to NTIS under this regulation (Section 1180.4(a) and 1180(d) (3)–(6)).

The final regulations contain a new § 1180.4(a)(4) which requires agencies, when preparing a product for transfer to NTIS, to advise NTIS as to whether products not printed by GPO have been made available for depository distribution by GPO. In addition, it has added a new § 1180.11(d) which establishes a general framework for handling products so identified.

Under this framework, DL's will be provided free online access to a current listing of all products that NTIS accepts as part of its permanent respository (Section 1180.11(d)(1)). They will be given a reasonable time to order products not previously made available to them (Section 1180.11(d)(2)). NTIS will bundle the requests and refer them back to the originating agency to be filled (new § 1180.11(d)(3)) or fill the order itself if NTIS and the originating agency have entered into appropriate agreements regarding reimbursement (Section 1180.11(d)(4)).

In the near future NTIS expects to develop a system through which DL's, at no charge to them, may have electronic access to full texts of STEI products. When this is operational, agencies will be able to fulfill their obligations to the DL's effortlessly and at no additional cost simply by providing NTIS with the product in a format prescribed by NTIS as suitable for online dissemination under this system (Section 1180.11(d)(5)).

The new regulations will also obligate DL's to protect the information provided to them (Section 1180.11(d)(6)). This is important because the improper disclosure of this valuable information could seriously erode NTIS's ability to operate on a self-sustaining basis. For example, improper dissemination of the list of products could significantly reduce the rental value of NTIS's bibliographic database as an income-producing asset.

Comment: The regulation should clarify that the requirement to make publications available under the Depository Library Program extends to publications in electronic formats.

NTIS Response: NTIS cannot issue interpretations of statutes it does not administer and that would be binding on other agencies. Such matters are more appropriately covered by OMB Circular A–130.

Appendix

Comment: The Appendix should be modified to indicate that it is inapplicable to a commenting agency's contractors and grantees.

NTIS Response: The Appendix includes model language that agencies may choose to employ if they elect to allow their contractors and grantees to submit products directly to NTIS. The regulations already make clear that contractors and grantees of this agency must obtain prior agency approval from an identified office before submitting such information directly to NTIS.

Executive Order 12866

This regulation has been reviewed by the Office of Information and Regulatory Affairs of the Office of Management and Budget under Executive Order 12886.

Executive Order 12372

NTIS has determined that these procedures do not affect directly any state or local government and that consultations with state and local officials are not required.

Executive Order 12612

NTIS has determined that these procedures do not contain policies with any federalism implications within the meaning of this Order.

Regulatory Flexibility Act

The General Counsel has certified to the Chief Counsel for Advocacy of the Small Business Administration that this rule, which applies only to the transfer by federal agencies of federally funded STEI, will not have a significant economic impact on a substantial number of small entities.

Paperwork Reduction Act

This rule does not contain any information collection requirement subject to the Paperwork Reduction Act.

Environmental Evaluation

NTIS has determined that this regulation will have no significant impact on the quality of the environment and that neither an environmental assessment nor an Environmental Impact Statement is needed.

List of Subjects in 15 CFR Part 1180

Scientific, technical and engineering information.

Issued in Springfield, Virginia, on December 28, 1993.

Ron Lawson,

Acting Director.

Accordingly, title 15 of the Code of Federal Regulations is amended by adding part 1180 as follows:

PART 1180—TRANSFER BY FEDERAL AGENCIES OF SCIENTIFIC, TECHNICAL AND ENGINEERING INFORMATION TO THE NATIONAL TECHNICAL INFORMATION SERVICE

Sec.
1180.1 Purpose and scope.
1180.2 Definitions.
1180.3 General rule.
1180.4 Preparing a product for transfer.
1180.5 Timeliness.
1180.6 Production of additional copies.
1180.7 Exceptions.
1180.8 Appointment of Agency Liaison Officers.
1180.9 Affiliates.
1180.10 NTIS permanent repository.
1180.11 Relation to other laws and procedures.

Appendix to Part 1180—Sample Funding Agreement Clause for Direct Submission of Products

Authority: Sec. 108 of Pub. L. 102–245, 106 Stat. 7 (15 U.S.C. 3704b–2).

§ 1180.1 Purpose and scope.

(a) The purpose of this regulation is to facilitate public access to the vast amount of scientific, technical and engineering information (STEI) that is produced by and for federal agencies.

(b) This regulation provides a variety of methods for federal agencies to adopt to ensure the timely transfer to the National Technical Information Service (NTIS) of all unclassified STEI that is available for public dissemination and that results from federal funding. It is issued pursuant to the authority contained in Section 108 of the American Technology Preeminence Act (Pub. L. 102–245).

§ 1180.2 Definitions.

Agency means a federal agency as that term is defined in Section 4 of the Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3703(8));

Director means the Director of the National Technical Information Service.

Federally funded refers to STEI which results from federal research and development activities funded in whole or in part with federal funds, whether performed by the agency itself or by contractors, grantees, cooperative research partners, joint venture partners, or under any similar arrangement involving federal funds.

Final when used to describe an STEI product means a product that the originating agency or contractor/grantee thereof intends for public dissemination and may exclude interim status reports routinely furnished to agencies by contractors and grantees for monitoring and other internal purposes and which are not intended for public dissemination.

Product includes, but is not limited to, any report, manual, standard, specification, book, paper, chart, map, graph, data collection, data file, data compilation, software, audio/video production, technology application assessment generated pursuant to Section 11(c) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710(c)), as well as materials pertaining to training technology and other federally owned or originated technologies, and applies to items produced in-house or outside the agency through the Government Printing Office, its contractors, Federal Prison Industries or any other producer, provided that such material is intended by the agency for public dissemination.

Scientific, technical and engineering information means—

(1) Basic and applied research that results from the efforts of scientists and engineers in any medium (including new theory and information obtained from experimentation, observation, instrumentation or computation in the form of text, numeric data or images), and

(2) Information that bears on business and industry generally, such as economic information, market information and related information, if the agency determines such information would be of value to consumers of the information described in paragraph (1) of this definition.

Summary means information relating to an ongoing research project likely to result in a final product.

§ 1180.3 General rule.

Unless an exception applies under section 1180.7, each federal agency shall, within the time period specified in this regulation, transfer to NTIS—

(a) At least one copy of every final STEI product resulting from the agency's federally funded research and development activities, and

(b) A summary of the agency's new and on-going research that is likely to result in a final STEI product if such final product or summary is unclassified and is intended by the agency for public dissemination.

§ 1180.4 Preparing a product for transfer.

(a) Every final STEI product or summary shall, to the extent practicable, be prepared in a format that is consistent with one of the various formats found in NTIS guidelines. In addition, every such product shall—

(1) Be accompanied by a report documentation page (SF 298) or its electronic equivalent;

(2) Be in a form capable of high quality reproduction appropriate to the medium;

(3) In the case of software, be accompanied by relevant documentation, such as operating manuals, but not including printed source code; and

(4) In the case of a product not printed by the Government Printing Office, be accompanied by a statement as to whether the product has been made available for depository distribution by the Government Printing Office.

(b) Each federal agency shall transfer or have transferred to NTIS those STEI products funded by it that are protected by copyright only if there is a license reserved to the Government. In such cases, the agency shall inform NTIS of the terms of the license. Suggested language for inclusion in agency funding instruments is contained in the Appendix to this part.

(c) If an agency has generated or funded an STEI product which should be available for public dissemination but has embedded within it any copyrighted material, the designated liaison appointed pursuant to § 1180.8 should work with NTIS to determine if it would be appropriate to seek a license from the copyright holder in order to make the STEI product available.

§ 1180.5 Timeliness.

A single copy of a final product or summary described in § 1180.3 must be transferred to NTIS within fifteen days of the date it is first made available for public dissemination through any distribution channel, and, whenever practical, as soon as it has been approved by the agency for final printing or other reproduction, unless the agency and the Director have otherwise agreed.

§ 1180.6 Production of additional copies.

Unless the agency determines that such action would not be feasible, it shall make appropriate arrangements to enable NTIS, from time to time and at NTIS's own discretion and expense, to ride agency printing and other reproduction orders.

§ 1180.7 Exceptions.

(a) An agency shall not be required to take any further action to submit a copy of a final STEI product to NTIS or one of its affiliates if—

(1) It has designated NTIS to receive a single copy of each STEI product once it has been produced, has made the arrangements specified in § 1180.6, if appropriate, and has made arrangements to receive appropriate certification from a contractor, grantee or other external

performer of federally funded research that a copy has been sent to NTIS or one of its affiliates within the appropriate time period pursuant to obligations incurred in the applicable funding agreement (see Appendix to this part) or pursuant to such other system as the agency has established to ensure timely transfer;

(2) The agency and the Director have executed an appropriate agreement or memorandum of understanding establishing an alternative system for compliance; or

(3) The federally funded STEI is protected by copyright for which no license has been reserved to the Government that would allow distribution by NTIS;

(4) The product is an agency generated article that is published in a privately produced journal; or

(5) The agency and the Director, pursuant to paragraph (b) of this section, have agreed that the transfer of a product otherwise covered by these regulations would not be appropriate.

(b) An agency and the Director shall be deemed to be in agreement within the meaning of paragraph (a)(3) of this section if the Director has not objected within 30 days to an agency's written notification of its determination that timely transfer of a product or category of products would not be appropriate under section 108 of the American Technology Preeminence Act. Examples of inappropriate transfers include:

(1) Transfers that could cause significant harm to an agency's existing dissemination program that is operating on a cost recovery basis, is operating in compliance with the policies described by OMB Circular A–130, and for which special arrangements that would permit supplemental distribution by NTIS cannot be negotiated.

(2) Federally funded STEI that has received, or is likely to receive, widespread distribution to most potential users at no charge.

§ 1180.8 Appointment of Agency Liaison Officers.

The head of each agency shall appoint or designate an officer or employee to serve as the STEI Liaison. The Liaison shall, to the extent authorized by the head of the agency—

(1) In cooperation with the Director, determine what products or summaries produced by the Government shall be transferred to NTIS on an ongoing basis;

(2) Determine which funding agreements are to require contractors and grantees to submit products directly to NTIS (for which purpose the Appendix to this part contains suggested language that agencies may wish to include in applicable funding instruments);

(3) Appoint additional liaison officers for major units or components of an agency if the Director and Liaison officer agree this would further the purposes of this regulation; and

(4) Enter into appropriate agreements with the Director and perform any other agency responsibilities described in this regulation.

§ 1180.9 Affiliates.

(a) The Director may recognize any federal agency or component of an agency as an affiliate for the purpose of receiving, on behalf of NTIS, any STEI product that is required to be transferred under these regulations if NTIS has entered into a memorandum of understanding with the Liaison Officer under which the recognized affiliate agrees to the ongoing transfer of all STEI products to NTIS in a timely manner and otherwise agrees to assume the role of an affiliate.

(b) A transfer by an agency to an approved affiliate shall be deemed a transfer to NTIS within the meaning of these regulations.

§ 1180.10 NTIS permanent repository.

A product, or category of product, will normally be accepted and maintained as part of NTIS' permanent repository as a service to agencies unless the Director advises the Liaison Officer that it has not been so accepted. In general, transferred products will not be accepted if they have not been properly prepared as required by Section 1180.4 or if NTIS believes that the cost of adding them to the repository will significantly exceed anticipated benefits to the public as measured by foreseeable demand. A product announced by NTIS as being available from NTIS shall be deemed to have been accepted by NTIS as part of its permanent repository.

§ 1180.11 Relation to other laws and procedures.

(a) Nothing in these regulations shall be deemed to exempt an agency from any of the following requirements:

(1) Compliance with the Freedom of Information Act (5 U.S.C. 552);

(2) Compliance with any requirements to protect material that contains classified national security information;

(3) Compliance with requirements to protect personal or other information that may not be disclosed without appropriate authority under applicable laws and procedures, such as the Privacy Act (5 U.S.C. 552a);

(4) Compliance with laws and regulations applicable to federal records under Title 44 of the United States Code or regulations issued by the National Archives and Records Administration (36 CFR, chapter XII);

(5) Compliance with requirements to distribute publications through the Depository Library Program either directly or through NTIS as prescribed in subsection (d) of this section; and

(6) In the case of an agency that is also a component of an agency as that term is defined in § 1180.2, compliance with all applicable requirements and procedures of the parent agency regarding these regulations.

(b) Nothing in these regulations shall be deemed to require an agency to take any of the following actions:

(1) To use NTIS as an agency's exclusive distribution channel;

(2) To transfer to NTIS information on matters that are specifically authorized under criteria established by an Executive Order to be kept secret in the interest of national defense or foreign policy and are in fact properly classified pursuant to such Executive Order; or

(3) to transfer, produce, or disseminate any other information that is required by law to be withheld, which the agency is authorized to withhold, or which is not intended by the agency for public dissemination.

(c) No contractor, grantee, or employee of a Federal agency shall submit a final STEI product directly to NTIS unless authorized to do so by the Liaison or the Liaison's designate, which authorization may be provided in an approved funding agreement (see Appendix to this part).

(d) In order to facilitate cooperation between agencies and the Depository Libraries—

(1) NTIS will, as soon as possible, but not later than six months from the effective date of these regulations, provide each Depository Library at no charge, online access to a current list of all final STEI products provided to NTIS under these regulations that have been entered into the NTIS system.

(2) The online system described in subsection (d) of this section will include an option that will allow each Depository Library thirty days from the date a product is added to the online listing to identify a product that it wishes to receive and that has not otherwise been made available to it.

(3) NTIS will accumulate these requests and, within a reasonable time, transfer them to the originating agency for fulfillment of each of the identified products.

(4) In lieu of the procedures described in paragraph (d)(3) of this section, NTIS will offer to enter into simple cost recovery arrangements with the

originating agency to duplicate and ship the identified products to the requesting Libraries in the format that the agency determines to be most cost effective, including microfiche, paper, diskette, or disc.

(5) NTIS will also establish, as soon as practical, a system of full text online access to final STEI products for the Depository Libraries at no charge to them. Those final STEI products provided to NTIS in a format prescribed by NTIS as suitable for online dissemination under this system will be made available to the Libraries at no charge to the originating agency, will be maintained online indefinitely, and will be available to the Libraries without regard to the thirty day selection time limit described in paragraph (d)(2) of this section.

(6) The services in this paragraph will be provided to Depository Libraries on the condition that they agree to ensure that online access to the NTIS listing described in paragraph (d)(1) of this section is restricted to the Library and its staff and that the full text products provided online pursuant to paragraph (d)(5) of this section are available only to the community served by that Library.

Appendix to Part 1180—Sample Funding Agreement Clause for Direct Submission of Products

Agencies electing to allow for their contractors, grantees, etc. to submit final products directly to NTIS are encouraged to employ a provision similar to the following in the applicable funding agreement:

"The (contractor)/(recipient) shall certify to the (contracting) (grants) officer—

"(1) a copy of all scientific, technical and engineering information products created or finalized in whole or in part with the funds requested has been or will be transferred to NTIS or a recognized affiliate (at the same time that it is provided to the sponsoring agency) (when the agency has determined that the product is approved for public dissemination) but no later than fifteen days after it is first made available for public dissemination through any other distribution channel, and

"(2) NTIS, or a recognized affiliate, has been advised as to whether the product is protected by copyright and, if so, a copy of the terms of any licenses reserved to the Government has been sent to NTIS, along with a copy of the SF 298."

[FR Doc. 93–32098 Filed 12–29–93; 1:02 pm]

BILLING CODE 3510–04–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Parts 341, 342, 343, 344, 345, 347, 360, 361, and 375

[Docket No. RM93–11–001]

Revisions to Oil Pipeline Regulations Pursuant to the Energy Policy Act of 1992

Issued December 22, 1993

AGENCY: Federal Energy Regulatory Commission, DOE.

ACTION: Final rule; briefs on limited issue.

SUMMARY: On October 22, 1993, the Commission issued a final rule in this proceeding, revising its regulations of oil pipelines to provide a simplified and generally applicable method for regulating oil pipeline rates by use of an index for setting rate ceilings for such rates. On December 9, 1993, Sinclair Oil Corporation and the National Council of Farmer Cooperatives filed a brief addressing the issue of the selection of an index for use in the indexing system adopted in the final rule. The Commission has determined that additional information on the choice of an index will add to the record of this rulemaking; therefore, the Commission is affording an opportunity for others to file briefs on this issue.

DATES: Briefs are due on or before January 21, 1994.

ADDRESSES: All filings should refer to Docket No. RM93–11–001 and should be addressed to: Office of the Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426.

FOR FURTHER INFORMATION CONTACT:

Harris S. Wood, Office of the General Counsel, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, (202) 208–0696.

Order Granting Rehearing for the Purpose of Further Consideration and Allowing Briefs on Limited Issue

On October 22, 1993, the Commission issued Order No. 561, its Final Rule in this proceeding.[1] Rehearing of Order No. 561 has been requested by numerous parties.

In order to afford additional time for consideration of the issues raised in the requests for rehearing, it is necessary to grant rehearing for the limited purpose of further consideration.

On December 9, 1993, Sinclair Oil Corporation and the National Council of Farmer Cooperatives filed a motion to file a "Brief in Response to Certain Issues Raised in Requests for Rehearing of Order No. 561." The brief addresses the issue of the selection of an index for use in the indexing system adopted in the Final Rule. On December 16, 1993, Phillips Pipe Line Company filed an answer in opposition to the motion.

Under Rule 713(d)(2) of the Commission's Rules of Practice and Procedure,[2] the Commission may allow parties to file briefs on one or more issues presented by a request for rehearing. Thus, although answers to rehearing requests are not permitted by the rules, the consideration of briefs is an accepted procedure. The Commission has determined that additional information on the choice of an index will add to the record of this rulemaking. Therefore, the brief filed by Sinclair and the Farmer Cooperatives will be accepted for filing, and the Commission will afford an opportunity for others to file briefs on this issue.

The Commission orders:

(A) Rehearing of the Commission's order issued on October 22, 1993, is hereby granted for the purpose of further consideration.

(B) Interested parties may file briefs no later than January 21, 1994, addressing the issue of what index should be used in the indexing system adopted in the Final Rule.

By the Commission.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32044 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[1] 65 FERC ¶ 61,109 (1993); 58 FR 58753 (November 4, 1993).

[2] 18 CFR 385.713(d)(2).

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Parts 1 and 602

[TD 8508]

RIN 1545–AE26

Adjustments to Basis of Stock and Indebtedness to Shareholders of S Corporations and Treatment of Distributions by S Corporations to Shareholders

AGENCY: Internal Revenue Service, Treasury.

ACTION: Final regulations.

SUMMARY: This document contains final regulations under section 1367 of the

Internal Revenue Code relating to adjustments to the basis of a shareholder's stock in an S corporation and the basis of indebtedness of an S corporation to a shareholder. This document also contains final regulations under section 1368 of the Internal Revenue Code relating to the treatment of distributions by an S corporation to its shareholders. Changes to the applicable law were made by the Subchapter S Revision Act of 1982, the Technical Corrections Act of 1982, the Tax Reform Act of 1984, and the Tax Reform Act of 1986. The final regulations affect S corporations and their shareholders and are necessary to provide them with the guidance they need to comply with the applicable tax law.

EFFECTIVE DATE: These regulations are effective on January 1, 1994 and apply to taxable years beginning on and after January 1, 1994.

FOR FURTHER INFORMATION CONTACT: Deane M. Burke (202) 622–3080 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Paperwork Reduction Act

The collections of information contained in these final regulations have been reviewed and approved by the Office of Management and Budget in accordance with the requirements of the Paperwork Reduction Act (44 U.S.C. 3504(h)) under control number 1545–1139. The estimated annual burden per respondent varies from .05 to .2 hour, depending on individual circumstances, with an estimated average of .1 hour.

These estimates are an approximation of the average time expected to be necessary for a collection of information. They are based on such information as is available to the Internal Revenue Service. Individual respondents may require greater or less time, depending on their particular circumstances.

Comments concerning the accuracy of this burden estimate and suggestions for reducing this burden should be directed to the Internal Revenue Service, Attn: IRS Reports Clearance Officer, PC:FP, Washington, DC 20224, and to the Office of Management and Budget, Attention: Desk Officer for the Department of the Treasury, Office of Information and Regulatory Affairs, Washington, DC 20503.

Background

This document amends 26 CFR part 1 that provides rules under sections 1367 and 1368 of the Internal Revenue Code of 1986 (Code), as amended. The amendments conform the regulations to amendments made to sections 1367 and 1368 by sections 2 and 6 of the Subchapter S Revision Act of 1982, section 305 of the Technical Corrections Act of 1982, sections 721(d), (r), and (w) and 722(e)(2) of the Tax Reform Act of 1984, and section 1879(m)(1)(B) of the Tax Reform Act of 1986.

On June 9, 1992, the **Federal Register** published a notice of proposed rulemaking (57 FR 24426) (the proposed regulations) concerning adjustments to basis of stock and indebtedness to shareholders of S corporations and treatment of distributions by S corporations to shareholders. Because no one requested to testify, the Service cancelled a public hearing scheduled for September 14, 1992. The Service, however, received written comments on the proposed regulations. After consideration of all of the comments, the proposed regulations are adopted as revised by this Treasury decision.

Explanation of Provisions

The final regulations provide rules under section 1367 regarding adjustments to the basis of a shareholder's stock in an S corporation and the basis of indebtedness of an S corporation to a shareholder. The final regulations also provide rules under section 1368 regarding the treatment of distributions by an S corporation to its shareholders. Except for modifications in response to the comments, which were generally favorable, these final regulations generally provide the same rules as the proposed regulations.

I. Adjustments to Basis of Stock

A. Separate Basis Approach

The proposed regulations provided a separate basis approach (comparable to the basis of a shareholder in C corporation stock) for determining adjustments to the basis of a shareholder's stock in an S corporation. The proposed regulations also provided a *spillover rule* that allowed a shareholder to apply losses and deductions in excess of the basis of a share of stock to which such items are attributable against the remaining bases of all other shares of stock owned by a shareholder. The Service invited and received comments on whether another approach such as an aggregate/average basis (comparable to the basis of a partner in a partnership interest) should be used for purposes of sections 1367, 1368, and 1012.

Commentators generally favored the separate basis approach with the spillover rule in the proposed regulations. The final regulations therefore retain this rule. In response to comments, the final regulations clarify that the spillover rule applies to basis adjustments for distributions to shareholders as well as to adjustments for pro rata shares of passthrough items of losses or deductions.

B. Ordering Rule

Under the proposed regulations, adjustments are made to the basis of a share of stock in the following order: (1) increases for income items (including tax-exempt income) and The excess of deductions for depletion over basis for non-oil and gas properties; (2) decreases for noncapital, nondeductible expenses and certain oil and gas depletion deductions; (3) decreases for items of loss or deduction; and (4) decreases for distributions. The Service invited and received several comments regarding the ordering rules.

Some commentators suggested that decreases to basis for distributions should occur prior to decreases for any losses or deductions, noncapital, nondeductible expenses, and oil and gas depletion deductions. The legislative history on this issue is contradictory. On the one hand, the committee reports state that the S corporation rules for adjusting basis generally will be analogous to those provided for partnerships (which adjust basis first for distributions, then for losses and deductions). On the other hand, the reports also state that "income and loss for any corporate taxable year will apply to adjust basis before the distribution rules apply for that year." See H.R. Rep. No. 826, 97th Cong., 2d Sess. 17 (1982); S. Rep. No. 640, 97th Cong., 2d Sess. 18 (1982). The language of the loss limitation rule of section 1366(d)(1) suggests that losses are to be applied against basis prior to distributions. Section 1366(d)(1) provides that "[t]he aggregate amount of losses and deductions taken into account by a shareholder * * * for a taxable year shall not exceed the sum of (A) the adjusted basis of the shareholder's stock in the S corporation (determined with regard to [increases for income and depletion items]), and (B) the shareholder's adjusted basis in any debt of the S corporation * * * " Because of the specific statement in the legislative history, and the implication in section 1366(d)(1), the Service and the Treasury Department believe that it is appropriate to require adjustments for losses and deductions prior to adjustments for distributions. Thus, the final regulations retain the ordering rule of the proposed regulations.

Commentators also suggested that decreases to basis for items of loss or deduction should occur prior to

decreases for noncapital, nondeductible expenses and oil and gas depletion deductions. In response to the comments, the final regulations provide that decreases for items of loss or deduction may precede decreases for noncapital, nondeductible expenses and oil and gas depletion deductions if a shareholder agrees that noncapital, nondeductible expenses in excess of basis and certain oil and gas depletion deductions will reduce basis in succeeding taxable years.

II. Adjustments to Debt Basis and Open Account Debt

The Service invited comments regarding the proper treatment of open account debt (advances to an S corporation by a shareholder that are not represented by separate written instruments and that are typically treated as one account by the S corporation) for purposes of reducing and restoring basis in indebtedness. In particular, the Service asked for comments on whether it is appropriate to treat each advance as a separate debt or all advances as a single debt. Several commentators suggested that the final regulations should provide a rule treating open account debt as a single debt for all advances by a shareholder. In response to comments, and for reasons of administrative simplicity, the final regulations provide that all open account debt held by a shareholder is to be treated as a single debt for purposes of reducing and restoring basis of debt.

III. Elections Under Section 1368

The proposed regulations provide that if a shareholder disposes of 20 percent or more of the corporation's issued shares of stock in one or more transactions during any thirty-day period during the taxable year of the corporation (*qualifying disposition*), the corporation may elect to treat the taxable year as if it consists of separate taxable years, the first of which ends on the date on which the shareholder disposes of 20 percent or more of the corporation's issued stock. Some commentators suggested that the election for qualifying dispositions of stock should be expanded to include any 20 percent or greater disposition of stock (whether by a sale or exchange, by a redemption treated as an exchange, or by a stock issuance). In response to comments, the final regulations modify the rule in the proposed regulations to permit the election for other dispositions of an S corporation's stock.

IV. Rules Relating to the Accumulated Adjustments Account

Under the final regulations, only S corporations with earnings and profits must maintain an accumulated adjustments account (*AAA*) to determine the tax effect of distributions during S years and the post-termination transition period as defined in section 1377(b)(1). An S corporation without earnings and profits does not need to maintain the AAA in order to determine the tax effect of distributions. Nevertheless, if an S corporation without earnings and profits engages in certain transactions to which section 381(a) applies, such as a merger into an S corporation with C corporation earnings and profits, the S corporation must be able to calculate its AAA at the time of the merger for purposes of determining the tax effect of post-merger distributions.

A. Adjustments to AAA

One commentator suggested that adjustments to the AAA should mirror the statutory scheme for adjustments to basis in stock under section 1367, at least in the context of dividend distributions. Under the proposed regulations, a distribution taxed to a shareholder under section 1368(b)(2) (because it exceeds a shareholder's stock basis) reduces the AAA balance. The commentator recommended that the AAA should be decreased only by the portion of a distribution to which section 1368(b)(1) applies. In effect, under the commentator's suggestion, adjustments to the AAA would mirror adjustments to a shareholder's basis in stock and would limit reduction of the AAA to nontaxable distributions.

Section 1368(e)(1)(A) provides that the AAA is adjusted in a manner similar to basis in stock and S corporation debt, but does not require that it mirror shareholder level adjustments to basis in stock and S corporation debt. Furthermore, the rule in the proposed regulations is more consistent with the fact that the AAA is a corporate level account. The Service and the Treasury Department believe that the commentator's approach would create unnecessary complexity and uncertainty in the administration of the statute. The AAA is a corporate level account and an S corporation, which does not generally need to track a shareholder's basis in its stock, would need to determine a shareholder's basis to adjust the AAA upon a distribution. Therefore, the final regulations do not adopt this commentator's suggested approach regarding adjustments to the AAA for distributions.

B. Redemption Distributions

Section 1368(e)(1)(B) provides that in the case of a redemption distribution that is treated as an exchange of stock under section 302(a) or section 303(a) (*redemption distribution*), the corporation's AAA is adjusted in an amount equal to the ratable share of the corporation's AAA attributable to the redeemed stock. In the case of a taxable year in which ordinary distributions and redemption distributions occur, the proposed regulations require an S corporation to determine the ratable share of the AAA attributable to redeemed stock under the method used to determine the pro rata portion of total earnings and profits attributable to shares redeemed in a C corporation. See Rev. Rul. 74–338, 1974–2 C.B. 101, and Rev. Rul. 74–339, 1974–2 C.B. 103. The Service invited and received comments regarding alternative approaches that appropriately reduce the AAA in the case of ordinary and redemption distributions.

While commentators generally acknowledged that the redemption rule in the proposed regulations is workable, they suggested the rule is unnecessarily complex. In response to comments, the final regulations modify the redemption rule. Under the final regulations, adjustments to the AAA are made first for passthrough items, second for ordinary distributions, and third for redemption distributions. For redemption distributions, an S corporation is required to adjust the AAA in an amount equal to the ratable share of the AAA attributable to the redeemed stock. The corporation also independently adjusts earnings and profits under the normal rules for C corporations.

V. Effective Date and Transition Rule

The final regulations under sections 1367 and 1368 apply to taxable years of the corporation beginning on or after January 1, 1994. For taxable years beginning before January 1, 1994, both the adjustments to the basis of a shareholder's stock and any indebtedness of the S corporation to a shareholder and the treatment of distributions by the S corporation to its shareholders must be determined in a reasonable manner. For purposes of the preceding sentence, return positions consistent with §§ 1.1367–1, 1.1367–2, 1.1368–1, 1.1368–2, and 1.1368–3 (other than the deemed dividend election under § 1.1368–1(f)(3)) are reasonable.

Special Analysis

It has been determined that this Treasury decision is not a significant

regulatory action as defined in Executive Order 12866. It has also been determined that section 553(b) of the Administrative Procedure Act (5 U.S.C. chapter 5) and the Regulatory Flexibility Act (5 U.S.C. chapter 6) do not apply to these regulations, and, therefore, a Regulatory Flexibility Analysis is not required. Pursuant to section 7805(f) of the Internal Revenue Code, the notice of proposed rulemaking was submitted to the Chief Counsel for Advocacy of the Small Business Administration for comment on its impact on small business.

Drafting Information

The principal author of these final regulations is Deane M. Burke of the Office of Assistant Chief Counsel (Passthroughs and Special Industries), Internal Revenue Service. However, other personnel from the Internal Revenue Service and Treasury Department participated in their development.

List of Subjects in 26 CFR Part 1

Income taxes, Reporting and recordkeeping requirements.

Adoption of Amendments to the Regulations

Accordingly, 26 CFR parts 1 and 602 are amended as follows:

PART 1—INCOME TAXES

Paragraph 1. The authority citation for part 1 is amended by adding the following citations in numerical order:

Authority: 26 U.S.C. 7805 * * *

Section 1.1368–1(f) and (g) also issued under 26 U.S.C. 1377(c).

Section 1.1368–2(b) also issued under 26 U.S.C. 1368(c).

Par. 2. Sections 1.1367–0 through 1.1367–3 and 1.1368–0 through 1.1368–4 are added to read as follows:

§ 1.1367–0 Table of contents.

The following table of contents is provided to facilitate the use of §§ 1.1367–1 through 1.1367–3.

§ 1.1367–1 Adjustments to basis of shareholder's stock in an S corporation.

(a) In general.
(1) Adjustments under section 1367.
(2) Applicability of other Internal Revenue Code provisions.
(b) Increase in basis of stock.
(1) In general.
(2) Amount of increase in basis of individual shares.
(c) Decrease in basis of stock.
(1) In general.
(2) Noncapital, nondeductible expenses.
(3) Amount of decrease in basis of individual shares.
(d) Time at which adjustments to basis of stock are effective.
(1) In general.
(2) Adjustment for nontaxable item.
(3) Effect of election under section 1377(a)(2) or § 1.1368–1(g)(2).
(e) Ordering rules.
(f) Elective ordering rule.
(g) Examples.

§ 1.1367–2 Adjustments to basis of indebtedness to shareholder.

(a) In general.
(b) Reduction in basis of indebtedness.
(1) General rule.
(2) Termination of shareholder's interest in corporation during taxable year.
(3) Multiple indebtedness.
(c) Restoration of basis.
(1) General rule.
(2) Multiple indebtedness.
(d) Time at which adjustments to basis of indebtedness are effective.
(1) In general.
(2) Effect of election under section 1377(a)(2) or § 1.1368–1(g)(2).
(e) Examples.

§ 1.1367–3 Effective date and transition rule.

§ 1.1367–1 Adjustments to basis of shareholder's stock in an S corporation.

(a) *In general*—(1) *Adjustments under section 1367.*

This section provides rules relating to adjustments required by section 1367 to the basis of a shareholder's stock in an S corporation. Paragraph (b) of this section provides rules concerning increases in the basis of a shareholder's stock, and paragraph (c) of this section provides rules concerning decreases in the basis of a shareholder's stock.

(2) *Applicability of other Internal Revenue Code provisions.* In addition to the adjustments required by section 1367 and this section, the basis of stock is determined or adjusted under other applicable provisions of the Internal Revenue Code.

(b) *Increase in basis of stock*—(1) *In general.* Except as provided in § 1.1367–2(c) (relating to restoration of basis of indebtedness to the shareholder), the basis of a shareholder's stock in an S corporation is increased by the sum of the items described in section 1367(a)(1). The increase in basis described in section 1367(a)(1)(C) for the excess of the deduction for depletion over the basis of the property subject to depletion does not include the depletion deduction attributable to oil or gas property. See section 613(A)(c)(11).

(2) *Amount of increase in basis of individual shares.* The basis of a shareholder's share of stock is increased by an amount equal to the shareholder's pro rata portion of the items described in section 1367(a)(1) that is attributable to that share, determined on a per share, per day basis in accordance with section 1377(a).

(c) *Decrease in basis of stock*—(1) *In general.* The basis of a shareholder's stock in an S corporation is decreased (but not below zero) by the sum of the items described in section 1367(a)(2).

(2) *Noncapital, nondeductible expenses.* For purposes of section 1367(a)(2)(D), expenses of the corporation not deductible in computing its taxable income and not properly chargeable to a capital account (*noncapital, nondeductible expenses*) are only those items for which no loss or deduction is allowable and do not include items the deduction for which is deferred to a later taxable year. Examples of noncapital, nondeductible expenses include (but are not limited to) the following: illegal bribes, kickbacks, and other payments not deductible under section 162(c); fines and penalties not deductible under section 162(f); expenses and interest relating to tax-exempt income under section 265; losses for which the deduction is disallowed under section 267(a)(1); the portion of meals and entertainment expenses disallowed under section 274; and the two-thirds portion of treble damages paid for violating antitrust laws not deductible under section 162.

(3) *Amount of decrease in basis of individual shares.* The basis of a shareholder's share of stock is decreased by an amount equal to the shareholder's pro rata portion of the passthrough items and distributions described in section 1367(a)(2) attributable to that share, determined on a per share, per day basis in accordance with section 1377(a). If the amount attributable to a share exceeds its basis, the excess is applied to reduce (but not below zero) the remaining bases of all other shares of stock in the corporation owned by the shareholder in proportion to the remaining basis of each of those shares.

(d) *Time at which adjustments to basis of stock are effective*—(1) *In general.* The adjustments described in section 1367(a) to the basis of a shareholder's stock are determined as of the close of the corporation's taxable year, and the adjustments generally are effective as of that date. However, if a shareholder disposes of stock during the corporation's taxable year, the adjustments with respect to that stock are effective immediately prior to the disposition.

(2) *Adjustment for nontaxable item.* An adjustment for a nontaxable item is determined for the taxable year in which the item would have been includible or deductible under the corporation's method of accounting for

federal income tax purposes if the item had been subject to federal income taxation.

(3) *Effect of election under section 1377(a)(2) or § 1.1368–1(g)(2).* If an election under section 1377(a)(2) (to terminate the year in the case of the termination of a shareholder's interest) or under § 1.1368–1(g)(2) (to terminate the year in the case of a qualifying disposition) is made with respect to the taxable year of a corporation, this paragraph (d) applies as if the taxable year consisted of separate taxable years, the first of which ends at the close of the day on which either the shareholder's interest is terminated or a qualifying disposition occurs, whichever the case may be.

(e) *Ordering rules.* For any taxable year, except as provided in paragraph (f) of this section, the adjustments required by section 1367(a) are made in the following order:

(1) Any increase in basis attributable to the income items described in section 1367(a)(1) (A) and (B) and the excess of the deductions for depletion described in section 1367(a)(1)(C);

(2) Any decrease in basis attributable to noncapital, nondeductible expenses described in section 1367(a)(2)(D) and the oil and gas depletion deduction described in section 1367(a)(2)(E);

(3) Any decrease in basis attributable to items of loss or deduction described in section 1367(a)(2) (B) and (C); and

(4) Any decrease in basis attributable to a distribution by the corporation described in section 1367(a)(2)(A).

(f) *Elective ordering rule.* A shareholder may elect to decrease basis under paragraph (e)(3) of this section prior to decreasing basis under paragraph (e)(2) of this section. If a shareholder makes this election, any amount described in paragraph (e)(2) of this section that is in excess of the shareholder's basis in stock and indebtedness is treated, solely for purposes of this section, as an amount described in paragraph (e)(2) of this section in the succeeding taxable year. A shareholder makes the election under this paragraph by attaching a statement to the shareholder's timely filed original or amended return that states that the shareholder agrees to the carryover rule of the preceding sentence. Once a shareholder makes an election under this paragraph with respect to an S corporation, the shareholder must continue to use the rules of this paragraph for that S corporation in future taxable years unless the shareholder receives the permission of the Commissioner.

(g) *Examples.* The following examples illustrate the principles of § 1.1367–1. In each example, the corporation is a calendar year S corporation:

Example 1. Adjustments to basis of stock in general. (i) On December 31, 1994, A owns a block of 50 shares of stock with an adjusted basis per share of $6 in Corporation S. On December 31, 1994, A purchases for $400 an additional block of 50 shares of stock with an adjusted basis of $8 per share. Thus, A holds 100 shares of stock for each day of the 1995 taxable year. For S's 1995 taxable year, A's pro rata share of the amount of the items described in section 1367(a)(1)(A) (relating to increases in basis of stock) is $300, and A's pro rata share of the amount of the items described in section 1367(a)(2) (B) and (D) (relating to decreases in basis of stock) is $500. S makes a distribution to A in the amount of $100 during 1995.

(ii) Pursuant to the ordering rules of paragraph (e) of this section, A increases the basis of each share of stock by $3 ($300/100 shares) and decreases the basis of each share of stock by $5 ($500/100 shares). Then A reduces the basis of each share by $1 ($100/100 shares) for the distribution. Thus, on January 1, 1996, A has a basis of $3 per share in his original block of 50 shares ($6+$3 – $5 – $1) and a basis of $5 per share in the second block of 50 shares ($8+$3 – $5 – $1).

Example 2. Adjustments attributable to basis of individual shares of stock. (i) On December 31, 1993, B owns one share of S corporation's 10 outstanding shares of stock. The basis of B's share is $30. On July 2, 1994, B purchases from another shareholder two shares for $25 each. During 1994, S corporation has no income or deductions but incurs a loss of $365. Under section 1377(a)(1)(A) and paragraph (c)(3) of this section, the amount of the loss assigned to each day of S's taxable year is $1.00 ($365/365 days). For each day, $.10 is allocated to each outstanding share ($1.00 amount of loss assigned to each day/10 shares).

(ii) B owned one share for 365 days and, therefore, reduces the basis of that share by the amount of loss attributable to it, *i.e.*, $36.50 ($.10 x 365 days). B owned two shares for 182 days and, therefore, reduces the basis of each of those shares by the amount of the loss attributable to each, *i.e.*, $18.20 ($.10 x 182 days).

(iii) The bases of the shares are decreased as follows:

Share	Original basis	Decrease	Adjusted basis	Excess basis reduction
No. 1	$30.00	$36.50	$0	$6.50
No. 2	25.00	18.20	6.80	0
No. 3	25.00	18.20	6.80	0
Total remaining basis			13.60	

(iv) Because the decrease in basis attributable to share No. 1 exceeds the basis of share No. 1 by $6.50 ($36.50 – $30.00), the excess is applied to reduce the bases of shares No. 2 and No. 3 in proportion to their remaining bases. Therefore, the bases of share No. 2 and share No. 3 are each decreased by an additional $3.25 ($6.50 x $6.80/$13.60). After this decrease, Share No. 1 has a basis of zero, Share No. 2 has a basis of $3.55, and Share No. 3 has a basis of $3.55.

Example 3. Effects of section 1377(a)(2) election and distribution on basis of stock. (i) On January 1, 1994, individuals B and C each own 50 of the 100 shares of issued and outstanding stock of Corporation S. B's adjusted basis in each share of stock is $120, and C's is $80. On June 30, 1994, S distributes $6,000 to B and $6,000 to C. On June 30, 1994, B sells all of her S stock for $10,000 to D. S elects under section 1377(a)(2) to treat its 1994 taxable year as consisting of two taxable years, the first of which ends at the close of June 30, the date on which B terminates her interest in S.

(ii) For the period January 1, 1994, through June 30, 1994, S has nonseparately computed income of $6,000 and a separately stated deduction item of $4,000. Therefore, on June 30, 1994, B and C, pursuant to the ordering rules of paragraph (e) of this section, increase the basis of each share by $60 ($6,000/100 shares) and decrease the basis of each share by $40 ($4,000/100 shares). Then B and C reduce the basis of each share by $120 ($12,000/100 shares) for the distribution.

(iii) The basis of B's stock is reduced from $120 to $20 per share ($120+$60 – $40 – $120). The basis of C's stock is reduced from $80 to $0 per share ($80+$60 – $40 – $120). See section 1368 and § 1.1368–1 (c) and (d) for rules relating to the tax treatment of the distributions.

(iv) Pursuant to paragraph (d)(3) of this section, the net reduction in the basis of B's shares of the S stock required by section 1367 and this section is effective immediately prior to B's sale of her stock. Thus, B's basis for determining gain or loss on the sale of the S stock is $20 per share, and B has a gain on the sale of $180 ($200 – $20) per share.

§ 1.1367–2 Adjustments to basis of indebtedness to shareholder.

(a) *In general.* This section provides rules relating to adjustments required by subchapter S to the basis of indebtedness of an S corporation to a shareholder. For purposes of this section, shareholder advances not evidenced by separate written

instruments and repayments on the advances (*open account debt*) are treated as a single indebtedness. The basis of indebtedness of the S corporation to a shareholder is reduced as provided in paragraph (b) of this section and restored as provided in paragraph (c) of this section.

(b) *Reduction in basis of indebtedness*—(1) *General rule.* If, after making the adjustments required by section 1367(a)(1) for any taxable year of the S corporation, the amounts specified in section 1367(a)(2) (B), (C), (D), and (E) (relating to losses, deductions, noncapital, nondeductible expenses, and certain oil and gas depletion deductions) exceed the basis of a shareholder's stock in the corporation, the excess is applied to reduce (but not below zero) the basis of any indebtedness of the S corporation to the shareholder held by the shareholder at the close of the corporation's taxable year. Any such indebtedness that has been satisfied by the corporation, or disposed of or forgiven by the shareholder, during the taxable year, is not held by the shareholder at the close of that year and is not subject to basis reduction.

(2) *Termination of shareholder's interest in corporation during taxable year.* If a shareholder terminates his or her interest in the corporation during the taxable year, the rules of this paragraph (b) are applied with respect to any indebtedness of the S corporation held by the shareholder immediately prior to the termination of the shareholder's interest in the corporation.

(3) *Multiple indebtedness.* If a shareholder holds more than one indebtedness at the close of the corporation's taxable year or, if applicable, immediately prior to the termination of the shareholder's interest in the corporation, the reduction in basis is applied to each indebtedness in the same proportion that the basis of each indebtedness bears to the aggregate bases of the indebtedness to the shareholder.

(c) *Restoration of basis*—(1) *General rule.* If, for any taxable year of an S corporation beginning after December 31, 1982, there has been a reduction in the basis of an indebtedness of the S corporation to a shareholder under section 1367(b)(2)(A), any *net increase* in any subsequent taxable year of the corporation is applied to restore that reduction. For purposes of this section, *net increase* with respect to a shareholder means the amount by which the shareholder's pro rata share of the items described in section 1367(a)(1) (relating to income items and excess deduction for depletion) exceed the items described in section 1367(a)(2) (relating to losses, deductions, noncapital, nondeductible expenses, certain oil and gas depletion deductions, and certain distributions) for the taxable year. These restoration rules apply only to indebtedness held by a shareholder as of the beginning of the taxable year in which the net increase arises. The reduction in basis of indebtedness must be restored before any net increase is applied to restore the basis of a shareholder's stock in an S corporation. In no event may the shareholder's basis of indebtedness be restored above the adjusted basis of the indebtedness under section 1016(a), excluding any adjustments under section 1016(a)(17) for prior taxable years, determined as of the beginning of the taxable year in which the net increase arises.

(2) *Multiple indebtedness.* If a shareholder holds more than one indebtedness as of the beginning of a corporation's taxable year, any net increase is applied first to restore the reduction of basis in any indebtedness repaid (in whole or in part) in that taxable year to the extent necessary to offset any gain that would otherwise be realized on the repayment. Any remaining net increase is applied to restore each outstanding indebtedness in proportion to the amount that the basis of each outstanding indebtedness has been reduced under section 1367(b)(2)(A) and paragraph (b) of this section and not restored under section 1367(b)(2)(B) and this paragraph (c).

(d) *Time at which adjustments to basis of indebtedness are effective*—(1) *In general.* The amounts of the adjustments to basis of indebtedness provided in section 1367(b)(2) and this section are determined as of the close of the corporation's taxable year, and the adjustments are generally effective as of the close of the corporation's taxable year. However, if the shareholder is not a shareholder in the corporation at that time, these adjustments are effective immediately before the shareholder terminates his or her interest in the corporation. If a debt is disposed of or repaid in whole or in part before the close of the taxable year, the basis of that indebtedness is restored under paragraph (c) of this section, effective immediately before the disposition or the first repayment on the debt during the taxable year.

(2) *Effect of election under section 1377(a)(2) or § 1.1368–1(g)(2).* If an election is made under section 1377(a)(2) (to terminate the year in the case of the termination of a shareholder's interest) or under § 1.1368–1(g)(2) (to terminate the year in the case of a qualifying disposition), this paragraph (d) applies as if the taxable year consisted of separate taxable years, the first of which ends at the close of the day on which the shareholder either terminates his or her interest in the corporation or disposes of a substantial amount of stock, whichever the case may be.

(e) *Examples.* The following examples illustrate the principles of § 1.1367–2. In each example, the corporation is a calendar year S corporation. The lending transactions described in the examples do not result in foregone interest (within the meaning of section 7872(e)(2)), original issue discount (within the meaning of section 1273), or total unstated interest (within the meaning of section 483(b)).

Example 1. Reduction in basis of indebtedness. (i) A has been the sole shareholder in Corporation S since 1992. In 1993, A loans S $1,000 (Debt No. 1), which is evidenced by a ten-year promissory note in the face amount of $1,000. In 1996, A loans S $5,000 (Debt No. 2), which is evidenced by a demand promissory note. On December 31, 1996, the basis of A's stock is zero; the basis of Debt No. 1 has been reduced under paragraph (b) of this section to $0; and the basis of Debt No. 2 has been reduced to $1,000. On January 1, 1997, A loans S $4,000 (Debt No. 3), which is evidenced by a demand promissory note. For S's 1997 taxable year, the sum of the amounts specified in section 1367(a)(1) (in this case, nonseparately computed income and the excess deduction for depletion) is $6,000, and the sum of the amounts specified in section 1367(a)(2) (B), (D), and (E) (in this case, items of separately stated deductions and losses, noncapital, nondeductible expenses, and certain oil and gas depletion deductions—there is no nonseparately computed loss) is $10,000. Corporation S makes no payments to A on any of the loans during 1997.

(ii) The $4,000 excess of loss and deduction items is applied to reduce the basis of each indebtedness in proportion to the basis of that indebtedness over the aggregate bases of the indebtedness to the shareholder (determined immediately before any adjustment under section 1367(b)(2)(A) and paragraph (b) of this section is effective for the taxable year). Thus, the basis of Debt No. 2 is reduced in an amount equal to $800 ($4,000 (excess)×$1,000 (basis of Debt No. 2)/$5,000 (total basis of all debt)). Similarly, the basis in Debt No. 3 is reduced in an amount equal to $3,200 ($4,000×$4,000/$5,000). Accordingly, on December 31, 1997, A's basis in his stock is zero and his bases in the three debts are as follows:

Debt	1/1/96 basis	12/31/96 reduction	1/1/97 basis	12/31/97 reduction	1/1/98 basis
No. 1	$1,000	$1,000	$0	$0	$0
No. 2	5,000	4,000	1,000	800	200
No. 3	.....	.....	4,000	3,200	800

Example 2. Restoration of basis of indebtedness. (i) The facts are the same as in *Example 1*. On July 1, 1998, S completely repays Debt No. 3, and, for S's 1998 taxable year, the net increase (within the meaning of paragraph (c) of this section) with respect to A equals $4,500.

(ii) The net increase is applied first to restore the bases in the debts held on January 1, 1998, before any of the net increase is applied to increase A's basis in his shares of S stock. The net increase is applied to restore first the reduction of basis in indebtedness repaid in 1998. Any remaining net increase is applied to restore the bases of the outstanding debts in proportion to the amount that each of these outstanding debts have been reduced previously under paragraph (b) of this section and have not been restored. As of December 31, 1998, the total reduction in A's debts held on January 1, 1998 equals $9,000. Thus, the basis of Debt No. 3 is restored by $3,200 (the amount of the previous reduction) to $4,000. A's basis in Debt No. 3 is treated as restored immediately before that debt is repaid. Accordingly, A does not realize any gain on the repayment. The remaining net increase of $1,300 ($4,500 – $3,200) is applied to restore the bases of Debt No. 1 and Debt No. 2. As of December 31, 1998, the total reduction in these outstanding debts is $5,800 ($9,000 – $3,200). The basis of Debt No. 1 is restored in an amount equal to $224 ($1,300×$1,000/$5,800). Similarly, the basis in Debt No. 2 is restored in an amount equal to $1,076 ($1,300×$4,800/$5,800). On December 31, 1998, A's basis in his S stock is zero and his bases in the two remaining debts are as follows:

Original basis	Amount reduced	1/1/98 basis	Amount restored	12/31/98 basis
$1,000	$1,000	$0	$224	$224
5,000	4,800	200	1,076	1,276

Example 3. Full restoration of basis in indebtedness when debt is repaid in part during the taxable year. (i) C has been a shareholder in Corporation S since 1992. In 1997, C loans S $1,000. S issues its note to C in the amount of $1,000, of which $950 is payable on March 1, 1998, and $50 is payable on March 1, 1999. On December 31, 1997, C's basis in all her shares of S stock is zero and her basis in the note has been reduced under paragraph (b) of this section to $900. For 1998, the net increase (within the meaning of paragraph (c) of this section) with respect to C is $300.

(ii) Because C's basis of indebtedness was reduced in a prior taxable year under § 1.1367–2(b), the net increase for 1998 is applied to restore this reduction. The restored basis cannot exceed the adjusted basis of the debt as of the beginning of the first day of 1998, excluding prior adjustments under section 1367, or $1,000. Therefore, $100 of the $300 net increase is applied to restore the basis of the debt from $900 to $1,000 effective immediately before the repayment on March 1, 1998. The remaining net increase of $200 increases C's basis in her stock.

Example 4. Determination of net increase—distribution in excess of increase in basis. (i) D has been the sole shareholder in Corporation S since 1990. On January 1, 1996, D loans S $10,000 in return for a note from S in the amount of $10,000 of which $5,000 is payable on each of January 1, 2000, and January 1, 2001. On December 31, 1997, the basis of D's shares of S stock is zero, and his basis in the note has been reduced under paragraph (b) of this section to $8,000. During 1998, the sum of the items under section 1367(a)(1) (relating to increases in basis of stock) with respect to D equals $10,000 (in this case, nonseparately computed income), and the sum of the items under section 1367(a)(2)(B), (C), (D), and (E) (relating to decreases in basis of stock) with respect to D equals $0. During 1998, S also makes distributions to D totaling $11,000. This distribution is an item that reduces basis of stock under section 1367(a)(2)(A) and must be taken into account for purposes of determining whether there is a net increase for the taxable year. Thus, for 1998, there is no net increase with respect to D because the amount of the items provided in section 1367(a)(1) do not exceed the amount of the items provided in section 1367(a)(2).

(ii) Because there is no net increase with respect to D for 1998, none of the 1997 reduction in D's basis in the indebtedness is restored. The $10,000 increase in basis under section 1367(a)(1) is applied to increase D's basis in his S stock. Under section 1367(a)(2)(A), the $11,000 distribution with respect to D's stock reduces D's basis in his shares of S stock to $0. See section 1368 and § 1.1368–1 (c) and (d) for the tax treatment of the $1,000 distribution in excess of D's basis.

Example 5. Distributions less than increase in basis. (i) The facts are the same as in *Example 4*, except that in 1998 S makes distributions to D totaling $8,000. On these facts, for 1998, there is a net increase with respect to D of $2,000 (the amount by which the items provided in section 1367(a)(1) exceed the amount of the items provided in section 1367(a)(2)).

(ii) Because there is a net increase of $2,000 with respect to D for 1998, $2,000 of the $10,000 increase in basis under section 1367(a)(1) is first applied to restore D's basis in the indebtedness to $10,000 ($8,000 + $2,000). Accordingly, on December 31, 1998, D has a basis in his shares of S stock of $0 ($0 + $8,000 (increase in basis remaining after restoring basis in indebtedness)—$8,000 (distribution)) and a basis in the note of $10,000.

§ 1.1367–3 Effective date and transition rule.

Sections 1.1367–1 and 1.1367–2 apply to taxable years of a corporation beginning on or after January 1, 1994. For taxable years beginning before January 1, 1994, the adjustments to the basis of a shareholder's stock and the basis of indebtedness of an S corporation to a shareholder must be determined in a reasonable manner, taking into account the statute and the legislative history. Return positions consistent with §§ 1.1367–1 and 1.1367–2 are reasonable.

§ 1.1368–0 Table of contents.

The following table of contents is provided to facilitate the use of §§ 1.1368–1 through 1.1368–4.

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§ 1.1368–3 Examples.

§ 1.1368–4 Effective date and transition rule.

§ 1.1368–1 Distributions by S corporations.

(a) *In general.* This section provides rules for distributions made by an S corporation with respect to its stock which, but for section 1368(a) and this section, would be subject to section 301(c) and other rules of the Internal Revenue Code that characterize a distribution as a dividend.

(b) *Date distribution made.* For purposes of section 1368, a distribution is taken into account on the date the corporation makes the distribution, regardless of when the distribution is treated as received by the shareholder.

(c) *S corporation with no earnings and profits.* A distribution made by an S corporation that has no accumulated earnings and profits as of the end of the taxable year of the S corporation in which the distribution is made is treated in the manner provided in section 1368(b).

(d) *S corporation with earnings and profits*—(1) General treatment of distribution. Except as provided in paragraph (d)(2) of this section, a distribution made with respect to its stock by an S corporation that has accumulated earnings and profits as of the end of the taxable year of the S corporation in which the distribution is made is treated in the manner provided in section 1368(c)(1), (2), and (3). See section 316 and § 1.316–2 for provisions relating to the allocation of earnings and profits among distributions.

(2) *Previously taxed income.* This paragraph (d)(2) applies to distributions by a corporation that has both accumulated earnings and profits and previously taxed income (within the meaning of section 1375(d)(2), as in effect prior to its amendment by the Subchapter S Revision Act of 1982, and the regulations thereunder) with respect to one or more shareholders. In the case of such a distribution, that portion remaining after the application of section 1368(c)(1) (relating to distributions from the accumulated adjustments account (AAA) as defined in § 1.1368–2(a)) is treated in the manner provided in section 1368(b) (relating to S corporations without earnings and profits) to the extent that portion is a distribution of money and does not exceed the shareholder's net share immediately before the distribution of the corporation's previously taxed income. The AAA and the earnings and profits of the corporation are not decreased by that portion of the distribution. Any distribution remaining after the application of this paragraph (d)(2) is treated in the manner provided in section 1368(c)(2) and (3).

(e) *Certain adjustments taken into account.* Paragraphs (c) and (d) of this section are applied only after taking into account—

(1) The adjustments to the basis of the shares of a shareholder's stock described in section 1367 (without regard to section 1367(a)(2)(A)) (relating to decreases attributable to distributions not includible in income) for the S corporation's taxable year; and

(2) The adjustments to the AAA required by section 1368(e)(1)(A) (but without regard to the adjustments for distributions under § 1.1368–2(a)(3)(iii)) for the S corporation's taxable year.

(f) *Elections relating to source of distributions*—(1) *In general.* An S corporation may modify the application of paragraphs (c) and (d) of this section by electing (pursuant to paragraph (f)(5) of this section)—

(i) To distribute earnings and profits first as described in paragraph (f)(2) of this section;

(ii) To make a deemed dividend as described in paragraph (f)(3) of this section; or

(iii) To forego previously taxed income as described in paragraph (f)(4) of this section.

(2) *Election to distribute earnings and profits first*—(i) *In general.* An S corporation with accumulated earnings and profits may elect under this paragraph (f)(2) for any taxable year to distribute earnings and profits first as provided in section 1368(e)(3). Except as provided in paragraph (f)(2)(ii) of this section, distributions made by an S corporation making this election are treated as made first from earnings and profits under section 1368(c)(2) and second from the AAA under section 1368(c)(1). Any remaining portion of the distribution is treated in the manner provided in section 1368(b). This election is effective for all distributions made during the year for which the election is made.

(ii) *Previously taxed income.* If a corporation to which paragraph (d)(2) of this section (relating to corporations with previously taxed income) applies makes the election provided in this paragraph (f)(2) for the taxable year, and does not make the election to forego previously taxed income under paragraph (f)(4) of this section, distributions by the S corporation during the taxable year are treated as made first, from previously taxed income under paragraph (d)(2) of this section; second, from earnings and profits under section 1368(c)(2); and third, from the AAA under section 1368(c)(1). Any portion of a distribution remaining after the previously taxed income, earnings and profits, and the AAA are exhausted is treated in the manner provided in section 1368(b).

(iii) *Corporation with subchapter C and subchapter S earnings and profits.* If an S corporation that makes the election provided in this paragraph (f)(2) has both subchapter C earnings and profits (as defined in section 1362(d)(3)(B)) and subchapter S earnings and profits in a taxable year of the corporation in which the distribution is made, the distribution is treated as made first from subchapter C earnings and profits, and second from subchapter S earnings and profits. *Subchapter S earnings and profits* are earnings and profits accumulated in a taxable year beginning before January 1, 1983 (or in the case of a qualified casualty insurance electing small business corporation or a qualified oil corporation, earnings and profits

accumulated in any taxable year), for which an election under subchapter S of chapter 1 of the Internal Revenue Code was in effect.

(3) *Election to make a deemed dividend.* An S corporation may elect under this paragraph (f)(3) to distribute all or part of its subchapter C earnings and profits through a deemed dividend. If an S corporation makes the election provided in this paragraph (f)(3), the S corporation will be considered to have made the election provided in paragraph (f)(2) of this section (relating to the election to distribute earnings and profits first). The amount of the deemed dividend may not exceed the subchapter C earnings and profits of the corporation on the last day of the taxable year, reduced by any actual distributions of subchapter C earnings and profits made during the taxable year. The amount of the deemed dividend is considered, for all purposes of the Internal Revenue Code, as if it were distributed in money to the shareholders in proportion to their stock ownership, received by the shareholders, and immediately contributed by the shareholders to the corporation, all on the last day of the corporation's taxable year.

(4) *Election to forego previously taxed income.* An S corporation may elect to forego distributions of previously taxed income. If such an election is made, paragraph (d)(2) of this section (relating to corporations with previously taxed income) does not apply to any distribution made during the taxable year. Thus, distributions by a corporation that makes the election to forego previously taxed income for a taxable year under this paragraph (f)(4) and does not make the election to distribute earnings and profits first under paragraph (f)(2) of this section are treated in the manner provided in section 1368(c) (relating to distributions by corporations with earnings and profits). Distributions by a corporation that makes both the election to distribute earnings and profits first under paragraph (f)(2) of this section and the election to forego previously taxed income under this paragraph (f)(4), are treated in the manner provided in paragraph (f)(2)(i) of this section.

(5) *Time and manner of making elections*—(i) *For earnings and profits.* If an election is made under paragraph (f)(2) of this section to distribute earnings and profits first, see section 1368(e)(3) regarding the consent required by shareholders.

(ii) *For previously taxed income and deemed dividends.* If an election is made to forego previously taxed income under paragraph (f)(4) of this section or to make a deemed dividend under paragraph (f)(3) of this section, consent by each "affected shareholder," as defined in section 1368(e)(3)(B), is required.

(iii) *Corporate statement regarding elections.* A corporation makes an election for a taxable year under this paragraph (f) by attaching a statement to a timely filed original or amended return required to be filed under section 6037 for that taxable year. In the statement, the corporation must identify the election it is making under § 1.1368–1(f) and must state that each shareholder consents to the election. An officer of the corporation must sign under penalties of perjury the statement on behalf of the corporation. A statement of election to make a deemed dividend under this paragraph must include the amount of the deemed dividend that is distributed to each shareholder.

(iv) *Irrevocable elections.* The elections under this paragraph (f) are irrevocable and are effective only for the taxable year for which they are made. In applying the preceding sentence to elections under this paragraph (f), an election to terminate the taxable year under section 1377(a)(2) or § 1.1368–1(g)(2) is disregarded.

(g) *Special rules*—(1) *Election to terminate year under section 1377 or § 1.1368–1(g)(2).* If an election is made under section 1377(a)(2) (to terminate the year when a shareholder terminates his or her interest in the corporation) or under paragraph (g)(2) of this section (to terminate the year when there is a qualifying disposition), this section applies as if the taxable year consisted of separate taxable years, the first of which ends at the close of the day on which the shareholder terminates his or her interest in the corporation or on which there is a qualifying disposition of stock, whichever the case may be.

(2) *Election in case of a qualifying disposition*— (i) *In general.* In the case of a qualifying disposition, a corporation may elect under this paragraph (g)(2)(i) to treat the year as if it consisted of separate taxable years, the first of which ends at the close of the day on which the qualifying disposition occurs. A *qualifying disposition* is—

(A) A disposition by a shareholder of 20 percent or more of the outstanding stock of the corporation in one or more transactions during any thirty-day period during the corporation's taxable year;

(B) A redemption treated as an exchange under section 302(a) or section 303(a) of 20 percent or more of the outstanding stock of the corporation from a shareholder in one or more transactions during any thirty-day period during the corporation's taxable year; or

(C) An issuance of an amount of stock equal to or greater than 25 percent of the previously outstanding stock to one or more new shareholders during any thirty-day period during the corporation's taxable year.

(ii) *Effect of the election.* A corporation making an election under paragraph (g)(2)(i) of this section must treat the taxable year as separate taxable years for purposes of allocating items of income and loss; making adjustments to the AAA, earnings and profits, and basis; and determining the tax effect of distributions under section 1368(b) and (c). An election made under paragraph (g)(2)(i) of this section may be made upon the occurrence of any qualifying disposition. Dispositions of stock that are taken into account as part of a qualifying disposition are not taken into account in determining whether a subsequent qualifying disposition has been made.

(iii) *Time and manner of making election.* A corporation makes an election under paragraph (g)(2)(i) of this section for a taxable year by attaching a statement to a timely filed original or amended return required to be filed under section 6037 for a taxable year (without regard to the election under paragraph (g)(2)(i) of this section). In the statement, the corporation must state that it is electing for the taxable year under § 1.1368–1(g)(2)(i) to treat the taxable year as if it consisted of separate taxable years. The corporation also must set forth facts in the statement relating to the qualifying disposition (e.g., sale, gift, stock issuance, or redemption), and state that each shareholder who held stock in the corporation during the taxable year (without regard to the election under paragraph (g)(2)(i) of this section) consents to this election. An officer of the corporation must sign under penalties of perjury the statement on behalf of the corporation. For purposes of this election, a shareholder of the corporation for the taxable year is a shareholder as described in section 1362(a)(2). A single election statement may be filed for all elections made under paragraph (g)(2)(i) of this section for the taxable year. An election made under paragraph (g)(2)(i) of this section is irrevocable.

§ 1.1368–2 Accumulated adjustments account (AAA).

(a) *Accumulated adjustments account*—(1) *In general.* The accumulated adjustments account is an account of the S corporation and is not apportioned among shareholders. The AAA is relevant for all taxable years

beginning on or after January 1, 1983, for which the corporation is an S corporation. On the first day of the first year for which the corporation is an S corporation, the balance of the AAA is zero. The AAA is increased in the manner provided in paragraph (a)(2) of this section and is decreased in the manner provided in paragraph (a)(3) of this section. For the adjustments to the AAA in the case of redemptions, reorganizations, and corporate separations, see paragraph (d) of this section.

(2) *Increases to the AAA.* The AAA is increased for the taxable year of the corporation by the sum of the following items with respect to the corporation for the taxable year:

(i) The items of income described in section 1366(a)(1)(A) other than income that is exempt from tax,

(ii) Any nonseparately computed income determined under section 1366(a)(1)(B); and

(iii) The excess of the deductions for depletion over the basis of property subject to depletion unless the property is an oil or gas property the basis of which has been allocated to shareholders under section 613A(c)(11).

(3) *Decreases to the AAA*—(i) *In general.* The AAA is decreased for the taxable year of the corporation by the sum of the following items with respect to the corporation for the taxable year—

(A) The items of loss or deduction described in section 1366(a)(1)(A);

(B) Any nonseparately computed loss determined under section 1366(a)(1)(B);

(C) Any expense of the corporation not deductible in computing its taxable income and not properly chargeable to a capital account, other than—

(*1*) Federal taxes attributable to any taxable year in which the corporation was a C corporation; and

(*2*) Expenses related to income that is exempt from tax; and

(D) The sum of the shareholders' deductions for depletion for any oil or gas property held by the corporation described in section 1367(a)(2)(E).

(ii) *Extent of allowable reduction.* The AAA may be decreased under paragraph (a)(3)(i) of this section below zero. The AAA is decreased by noncapital, nondeductible expenses under paragraph (a)(3)(i)(C) of this section even though a portion of the noncapital, nondeductible expenses is not taken into account by a shareholder under § 1.1367–1(f) (relating to the elective ordering rule). The AAA is also decreased by the entire amount of any loss or deduction even though a portion of the loss or deduction is not taken into account by a shareholder under section 1366(d)(1) or is otherwise not currently deductible under the Internal Revenue Code. However, in any subsequent taxable year in which the loss or deduction or noncapital, nondeductible expense is treated as incurred by the corporation with respect to the shareholder under section 1366(d)(2) or § 1.1367–1(f) (or in which the loss or deduction is otherwise allowed to the shareholder), no further adjustment is made to the AAA.

(iii) *Decrease to the AAA for distributions.* The AAA is decreased (but not below zero) by any portion of a distribution to which section 1368(b) or (c)(1) applies.

(4) *Ordering Rules for the AAA.* For any taxable year, the adjustments to the AAA are made in the following order:

(i) The AAA is increased under paragraph (a)(2) of this section before it is decreased under paragraph (a)(3) of this section for the taxable year;

(ii) The AAA is decreased under paragraph (a)(3)(i) of this section before it is decreased under paragraph (a)(3)(iii) of this section;

(iii) The AAA is decreased (but not below zero) by any portion of an ordinary distribution to which section 1368(b) or (c)(1) applies; and

(iv) The AAA is adjusted (whether negative or positive) for redemption distributions under paragraph (d)(1) of this section.

(b) *Distributions in excess of the AAA*—(1) *In general.* A portion of the AAA (determined under paragraph (b)(2) of this section) is allocated to each of the distributions made for the taxable year if—

(i) An S corporation makes more than one distribution of property with respect to its stock during the taxable year of the corporation (including an S short year as defined under section 1362(e)(1)(A));

(ii) The AAA has a positive balance at the close of the year; and

(iii) The sum of the distributions made during the corporation's taxable year exceeds the balance of the AAA at the close of the year.

(*2*) *Amount of the AAA allocated to each distribution.* The amount of the AAA allocated to each distribution is determined by multiplying the balance of the AAA at the close of the current taxable year by a fraction, the numerator of which is the amount of the distribution and the denominator of which is the amount of all distributions made during the taxable year. For purposes of this paragraph (b)(2), the term *all distributions made during the taxable year* does not include any distribution treated as from earnings and profits or previously taxed income pursuant to an election made under section 1368(e)(3) and § 1.1368–1(f)(2). See paragraph (d)(1) of this section for rules relating to the adjustments to the AAA for redemptions and distributions in the year of a redemption.

(c) *Distribution of money and loss property*—(1) *In general.* The amount of the AAA allocated to a distribution under this section must be further allocated (under paragraph (c)(2) of this section) if the distribution—

(i) Consists of property the adjusted basis of which exceeds its fair market value on the date of the distribution and money;

(ii) Is a distribution to which § 1.1368–1(d)(1) applies; and

(iii) Exceeds the amount of the corporation's AAA properly allocable to that distribution.

(2) *Allocating the AAA to loss property.* The amount of the AAA allocated to the property other than money is equal to the amount of the AAA allocated to the distribution multiplied by a fraction, the numerator of which is the fair market value of the property other than money on the date of distribution and the denominator of which is the amount of the distribution. The amount of the AAA allocated to the money is equal to the amount of the AAA allocated to the distribution reduced by the amount of the AAA allocated to the property other than money.

(d) *Adjustment in the case of redemptions, reorganizations, and divisions*—(1) *Redemptions*—(i) *General Rule.* In the case of a redemption distribution by an S corporation that is treated as an exchange under section 302(a) or section 303(a) (a *redemption distribution*), the AAA of the corporation is adjusted in an amount equal to the ratable share of the corporation's AAA (whether negative or positive) attributable to the redeemed stock as of the date of the redemption.

(ii) *Special rule for years in which a corporation makes both ordinary and redemption distributions.* In any year in which a corporation makes one or more distributions to which section 1368(a) applies (*ordinary distributions*) and makes one or more redemption distributions, the AAA of the corporation is adjusted first for any ordinary distributions and then for any redemption distributions.

(iii) *Adjustments to earnings and profits.* Earnings and profits are adjusted under section 312 independently of any adjustments made to the AAA.

(2) *Reorganizations.* An S corporation acquiring the assets of another S corporation in a transaction to which section 381(a)(2) applies will succeed to and merge its AAA (whether positive or

negative) with the AAA (whether positive or negative) of the distributor or transferor S corporation as of the close of the date of distribution or transfer. Thus, the AAA of the acquiring corporation after the transaction is the sum of the AAAs of the corporations prior to the transaction.

(3) *Corporate separations to which section 368(a)(1)(D) applies.* If an S corporation with accumulated earnings and profits transfers a part of its assets constituting an active trade or business to another corporation in a transaction to which section 368(a)(1)(D) applies, and immediately thereafter the stock and securities of the controlled corporation are distributed in a distribution or exchange to which section 355 (or so much of section 356 as relates to section 355) applies, the AAA of the distributing corporation immediately before the transaction is allocated between the distributing corporation and the controlled corporation in a manner similar to the manner in which the earnings and profits of the distributing corporation are allocated under section 312 (h). See § 1.312–10(a).

(e) *Election to terminate year under section 1377(a)(2) or § 1.1368–1(g)(2).* If an election is made under section 1377(a)(2) (to terminate the year in the case of termination of a shareholder's interest) or § 1.1368–1(g)(2) (to terminate the year in the case of a qualifying disposition), this section applies as if the taxable year consisted of separate taxable years, the first of which ends at the close of the day on which the shareholder terminated his or her interest in the corporation or makes a substantial disposition of stock, whichever the case may be.

§ 1.1368–3 Examples.

The principles of §§ 1.1368–1 and 1.1368–2 are illustrated by the examples below. In each example Corporation S is a calendar year corporation:

Example 1. Distributions by S corporations without C corporation earnings and profits. (i) Corporation S, an S corporation, has no earnings and profits as of January 1, 1996, the first day of its 1996 taxable year. S's sole shareholder, A, holds 10 shares of S stock with a basis of $1 per share as of that date. On March 1, 1996, S makes a distribution of $38 to A. For S's 1996 taxable year, A's pro rata share of the amount of the items described in section 1367(a)(1) (relating to increases in basis of stock) is $50 and A's pro rata share of the amount of the items described in section 1367(a)(2) (B) through (D) (relating to decreases in basis of stock for items other than distributions) is $26.

(ii) Under section 1368(d)(1) and § 1.1368–1(e)(1), the adjustments to the bases of A's stock in S described in section 1367 are made before the distribution rules of section 1368 are applied. Thus, A's basis per share in the stock is $3.40 ($1 + [($50–$26) / 10 shares]) before taking into account the distribution. Under section 1367(a)(2)(A), the basis of A's stock is decreased by distributions to A that are not includible in A's income. Under § 1.1367–1(c)(3), the amount of the distribution that is attributable to each share of A's stock is $3.80 ($38 distribution / 10 shares). However, A only has a basis of $3.40 in each share, and basis may not be reduced below zero. Therefore, the basis of each share of his stock is reduced by $3.40 to zero, and the remaining $4.00 of the distribution ([$3.80–$3.40] x 10 shares) is treated as gain from the sale or exchange of property. As of January 1, 1997, A has a basis of $0 in his shares of S stock.

Example 2. Distributions by S corporations with C corporation earnings and profits. (i) Corporation S properly elects to be an S corporation beginning January 1, 1997, and as of that date has accumulated earnings and profits of $30. B, an individual and sole shareholder of Corporation S, has 10 shares of S stock with a basis of $12 per share. In addition, B lends $30 to S evidenced by a demand note.

(ii) During 1997, S has a nonseparately computed loss of $150. S makes no distributions to B during 1997. Under section 1366(d)(1), B is allowed a loss equal to $150, the amount equal to the sum of B's bases in his shares of stock and his basis in the debt. Under section 1367, the loss reduces B's adjusted basis in his stock and debt to $0. Under § 1.1368–2(a)(3), S's AAA as of December 31, 1997, has a deficit of $150 as a result of S's loss for the year.

(iii) For 1998, S has $220 of separately stated income and distributes $110 to B. The balance in the AAA (negative $150 from 1997) is increased by $220 for S's income for the year and decreased to $0 for the portion of the distribution that is treated as being from the AAA ($70). Under § 1.1367–2(c), B's net increase is $150, determined by reducing the $220 of income by the $70 of the distribution not includible in income by B. Thus, B's basis in the debt is fully restored to $30, and B's basis in S stock (before accounting for the distribution) is increased from zero to $19 per share ([$220–$30 applied to the debt] / 10). Thirty dollars of the distribution is considered a dividend to the extent of S's $30 of earnings and profits, and the remaining $10 of the distribution reduces B's basis in the S stock. Thus, B's basis in the S stock as of December 31, 1998, is $11 per share ($19–[$70 AAA distribution / 10]—[10 distribution treated as a reduction in basis / 10]). The balance in the AAA is $0, S's earnings and profits are $0, and B's basis in the loan is $30.

Example 3. Election in case of disposition of substantial amount of stock. (i) Corporation S, an S corporation, has earnings and profits of $3,000 and a balance in the AAA of $1,000 on January 1, 1997. C, an individual and the sole shareholder of Corporation S, has 100 shares of S stock with a basis of $10 per share. On July 3, 1997, C sells 50 shares of his S stock to D, an individual, for $250. For 1997, S has taxable income of $1,000, of which $500 was earned on or before July 3, 1997, and $500 earned after July 3, 1997. During its 1997 taxable year, S distributes $1,000 to C on February 1 and $1,000 to each of C and D on August 1. S does not make the election under section 1368(e)(3) and § 1.1368–1(f)(2) to distribute its earnings and profits before its AAA. S makes the election under § 1.1368–1(g)(2) to treat its taxable year as if it consisted of separate taxable years, the first of which ends at the close of July 3, 1997, the date of the qualifying disposition.

(ii) Under section § 1.1368–1(g)(2), for the period ending on July 3, 1997, S's AAA is $500 ($1,000 (AAA as of January 1, 1997) + $500 (income earned from January 1, 1997 through July 3, 1997)—$1,000 (distribution made on February 1, 1997)). C's bases in his shares of stock is decreased to $5 per share ($10 (original basis) + $5 (increase per share for income)—$10 (decrease per share for distribution)).

(iii) The AAA is adjusted at the end of the taxable year for the period July 4 through December 31, 1997. It is increased from $500 (AAA as of the close of July 3, 1997) to $1,000 for the income earned during this period and is decreased by $1,000, the portion of the distribution ($2,000 in total) made to C and D on August 1 that does not exceed the AAA. The $1,000 portion of the distribution that remains after the AAA is reduced to zero is attributable to earnings and profits. Therefore C and D each have a dividend of $500, which does not affect their basis or S's AAA. The earnings and profits account is reduced from $3,000 to $2,000.

(iv) As of December 31, 1997, C and D have bases in their shares of stock of zero ($5 (basis as of July 4)+$5 ($500 income/100 shares)—$10 ($1,000 distribution/100 shares)). C and D each will report $500 as dividend income, which does not affect their basis or S's AAA.

Example 4. Election to distribute earnings and profits first. (i) Corporation S has been a calendar year C corporation since 1975. For 1982, S elects for the first time to be taxed under subchapter S, and during 1982 has $60 of earnings and profits. As of December 31, 1995, S has an AAA of $10 and earnings and profits of $160, consisting of $100 of subchapter C earnings and profits and $60 of subchapter S earnings and profits. For 1996, S has $200 of taxable income and the AAA is increased to $210 (before taking distributions into account). During 1996, S distributes $240 to its shareholders. With its 1996 tax return, S properly elects under section 1368(e)(3) and § 1.1368–1(f)(2) to distribute its earnings and profits before its AAA.

(ii) Because S elected to distribute its earnings and profits before its AAA, the first $100 of the distribution is characterized as a distribution from subchapter C earnings and profits; the next $60 of the distribution is characterized as a distribution from subchapter S earnings and profits. Because $160 of the distribution is from earnings and profits, the shareholders of S have a $160 dividend. The remaining $80 of the distribution is a distribution from S's AAA and is treated by the shareholders as a return of capital or gain from the sale or exchange of property, as appropriate, under § 1.1368–

1(d)(1). S's AAA, as of December 31, 1996, equals $130 ($210–$80).

Example 5. Distributions in excess of the AAA. (i) On January 1, 1995, Corporation S has $40 of earnings and profits and a balance in the AAA of $100. S has two shareholders, E and F, each of whom own 50 shares of S's stock. For 1995, S has taxable income of $50, which increases the AAA to $150 as of December 31, 1995 (before taking into account distributions made during 1995). On February 1, 1995, S distributes $60 to each shareholder. On September 1, 1995, S distributes $30 to each shareholder. S does not make the election under section 1368(e)(3) and § 1.1368–1(f)(2) to distribute its earnings and profits before its AAA.

(ii) The sum of the distributions exceed S's AAA. Therefore, under § 1.1368–2(b), a portion of S's $150 balance in the AAA as of December 31, 1995, is allocated to each of the February 1 and September 1 distributions based on the respective sizes of the distributions. Accordingly, S must allocate $100 ($150 (AAA)×($120 (February 1 distribution)/$180 (the sum of the distributions))) of the AAA to the February 1 distribution, and $50 ($150×($60/$180)) to the September 1 distribution. The portions of the distributions to which the AAA is allocated are treated by the shareholder as a return of capital or gain from the sale or exchange of property, as appropriate. The remainder of the two distributions is treated as a dividend to the extent that it does not exceed S's earnings and profits. E and F must each report $10 of dividend income for the February 1 distribution. For the September 1 distribution, E and F must each report $5 of dividend income.

Example 6. Ordinary and redemption distributions in the same taxable year. (i) On January 1, 1995, Corporation S, an S corporation, has $20 of earnings and profits and a balance in the AAA of $10. S has two shareholders, G and H, each of whom owns 50 shares of S's stock. For 1995, S has taxable income of $16, which increases the AAA to $26 as of December 31, 1995 (before taking into account distributions made during 1995). On February 1, 1995, S distributes $10 to each shareholder. On December 31, 1995, S redeems for $13 all of shareholder G's stock in a redemption that is treated as a sale or exchange under section 302(a).

(ii) The sum of the ordinary distributions does not exceed S's AAA. Therefore, S must reduce the $26 balance in the AAA by $20 for the February 1 ordinary distribution. The portions of the distribution by which the AAA is reduced are treated by the shareholders as a return of capital or gain from the sale or exchange of property. S must adjust the remaining AAA, $6, in an amount equal to the ratable share of the remaining AAA attributable to the redeemed stock, or $3 (50%×$6).

(iii) S also must adjust the earnings and profits of $20 in an amount equal to the ratable share of the earnings and profits attributable to the redeemed stock. Therefore, S adjusts the earnings and profits by $10 (50%×$20), the ratable share of the earnings and profits attributable to the redeemed stock.

§ 1.1368–4 Effective date and transition rule.

Sections 1.1368–1, 1.1368–2, and 1.1368–3 apply to taxable years of a corporation beginning on or after January 1, 1994. For taxable years beginning before January 1, 1994, the treatment of distributions by an S corporation to its shareholders must be determined in a reasonable manner, taking into account the statute and the legislative history. Except with regard to the deemed dividend rule under § 1.1368–1(f)(3), return positions consistent with §§ 1.1368–1, 1.1368–2, and 1.1368–3 are reasonable.

PART 602—OMB CONTROL NUMBERS UNDER THE PAPERWORK REDUCTION ACT

Par. 12. The authority citation for part 602 continues to read:

Authority: 26 U.S.C. 7805.

Par. 13. Section 602.101(c) is amended by adding the following entries in numerical order to the table to read as follows:

§ 602.101 OMB Control numbers.

* * * * *

(c) * * *

CFR part or section where identified	Current OMB control Number
* * * * *	
1.1367–1(f)	1545–1139
1.1368–1(f)(2)	1545–1139
1.1368–1(f)(3)	1545–1139
1.1368–1(f)(4)	1545–1139
1.1368–1(g)(2)	1545–1139
* * * * *	

Margaret Milner Richarson,

Commissioner of Internal Revenue.

Approved: December 21, 1993.

Leslie Samuels,

Assistant Secretary of the Treasury (Tax Policy).

[FR Doc. 93–31928 Filed 12–30–93; 8:45 am]

BILLING CODE 4830–01–U

EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

29 CFR Part 1650

Collection of Debts by Federal Tax Refund Offset

AGENCY: Equal Employment Opportunity Commission.

ACTION: Interim final rule.

SUMMARY: The Equal Employment Opportunity Commission (EEOC) is amending its regulations, pursuant to the Deficit Reduction Act of 1984, to add regulations on procedures for the collection of debts by Federal tax refund offset. This rule outlines the procedures that EEOC will follow for collection of a past-due, legally enforceable debt owed to EEOC by referring such debt to the internal Revenue Service (IRS) for offset against any overpayment of tax.

DATES: The interim final rule is effective on January 3, 1994. Comments must be received by March 4, 1994.

ADDRESSES: Written comments should be addressed to Frances Hart, Executive Officer, Office of Executive Secretariat, Equal Employment Opportunity Commission, room 10402, 1801 L Street, NW., Washington, DC 20507.

FOR FURTHER INFORMATION CONTACT: Nicholas M. Inzeo, Associate Legal Counsel, Thomas J. Schlageter, Assistant Legal Counsel, or Daniel T. Riordan, Staff Attorney, at (202) 663–4669.

Copies of this interim final rule are available, upon request, in the following alternate formats: Large print, braille, electronic file on computer disk, and audio-tape. Copies may be obtained from the EEOC Publications Center by calling (800) 669–3362 (voice) or (800) 800–3302 (TDD).

SUPPLEMENTARY INFORMATION: Section 2653 of the Deficit Reduction Act of 1984, 31 U.S.C. 3720A, was designed to make significant improvements in a Federal agency's ability to collect a past-due, legally enforceable debt owed by a taxpayer through offset by the IRS against an overpayment of Federal tax. The Deficit Reduction Act also amended the Internal Revenue Code of 1954 by adding subsection 6402(d) providing that the Secretary of the Treasury shall: (1) Reduce the amount of any overpayment due any person by the amount of a past-due, legally enforceable debt owed to any Federal agency upon receiving notice from the agency that such person owes the debt, (2) pay the reduction to the agency, and (3) notify the person making the overpayment that the overpayment has been reduced to satisfy such debt.

These regulations contain the procedures for collecting debts due to the Commission. The individual owing the past-due, legally enforceable debt will be notified of the debt and given the opportunity to submit evidence concerning the existence or amount of the debt. Any evidence received will be considered by Commission officials prior to submitting any claim to the IRS for collection.

The Commission has determined that this rule does not constitute a major rule for the purposes of Executive Order 12291. The Commission also certifies

under 5 U.S.C. 605(b), enacted by the Regulatory Flexibility Act (Pub. L. 96–354), that the rule will not result in a significant impact on a substantial number of small employers. For this reason, a regulatory flexibility analysis is not required.

For the Commission.

Tony E. Gallegos,

Chairman.

For the reasons set forth in the preamble, title 29, chapter XIV of the Code of Federal Regulations is amended by adding part 1650 to read as follows:

PART 1650—DEBT COLLECTION

Subpart A—[Reserved]

Subpart B—Procedures for the Collection of Debts by Federal Tax Refund Offset

Sec.
1650.201 Purpose.
1650.202 Past-due legally enforceable debt.
1650.203 Notification of intent to collect.
1650.204 Reasonable attempt to notify.
1650.205 Consideration of evidence submitted as a result of notification of intent
1650.206 Notification to Internal Revenue Service.
1650.207 Administrative charges.

Authority: 31 U.S.C. 3720A

Subpart A—[Reserved]

Subpart B—Procedures for the Collection of Debts by Federal Tax Refund Offset

Authority: 31 U.S.C. 3720A.

§ 1650.201 Purpose.

This subpart establishes procedures for EEOC to refer past-due legally enforceable debts to the Internal Revenue Service (IRS) for offset against the income tax refunds of persons owing debts to EEOC. It specifies the agency procedures and the rights of the debtor applicable to claims referred under the Federal Tax Refund Offset Program for the collection of debts owned to EEOC.

§ 1650.202 Past-due legally enforceable debt.

A past-due legally enforceable debt for referral to the IRS is a debt that resulted from any statute administered by EEOC and:

(a) Is an obligation of a debtor who is a natural person;

(b) Except in the case of a judgment debt, has been delinquent at least 3 months but not more than 10 years at the time the offset is made;

(c) Is at least $25.00;

(d) Cannot be currently collected pursuant to the salary offset provisions of 5 U.S.C. 5514(a)(1);

(e) Is ineligible for administrative offset under 31 U.S.C. 3716(a) by reason of 31 U.S.C. 3716(c)(2) or cannot be collected by administrative offset under 31 U.S.C. 3716(a) by the EEOC against amounts payable to or on behalf of the debtor by or on behalf of the EEOC;

(f) With respect to which EEOC has given the debtor at least 60 days from the date of notification to present evidence that all or part of the debt is not past-due or legally enforceable, has considered evidence presented by such debtor, and has determined that an amount of such debt is past-due and legally enforceable;

(g) Has been disclosed by EEOC to a consumer reporting agency is authorized by 31 U.S.C. 3711(f), unless the consumer reporting agency would be prohibited from reporting such information by 15 U.S.C. 1681c, or unless the amount of the debt does not exceed $100.00;

(h) EEOC's records do not contain evidence that the person owing that debt (or his or her spouse) has filed for bankruptcy under title 11 of the United States Code; and

(i) EEOC can clearly establish at the time of the referral that the automatic stay under 11 U.S.C. 362 has been lifted or is no longer in effect with respect to the person owing the debt or his or her spouse, and the debt was not discharged in the bankruptcy proceeding.

§ 1650.203 Notification of intent to collect.

(a) *Notification before submission to the IRS.* A request for reduction of an IRS income tax refund will be made only after EEOC makes a determination that an amount is owed and past-due and gives or makes a reasonable attempt to give the debtor 60 days written notification of intent to collect by Federal tax refund offset.

(b) *Contents of Notification.* EEOC's notification of intent to collect by Federal tax refund offset shall provide:

(1) The amount of the debt;

(2) That unless the debt is repaid within 60 days from the date of EEOC's notification of intent, EEOC intends to collect the debt by requesting the IRS to offset an amount equal to the amount of the debt and all accumulating interest and other charges against any overpayment of tax after liabilities subject to 26 U.S.C. 6402(a) and (c) have been satisfied;

(3) A mailing address for forwarding any written correspondence and a contact and a toll-free or collect telephone number for any questions; and

(4) That the debtor may present evidence to EEOC that all or part of the debt is not past due or legally enforceable by—

(i) Sending a written request for a review of the evidence to the address provided in the notification;

(ii) Stating in the request for review the amount disputed and the reasons why the debtor believes that the debt is not past-due or is not legally enforceable; or

(iii) Including in the request for review any documents that the debtor wishes to be considered to stating that the additional information will be submitted within the remainder of the 60-day period.

§ 1650.204 Reasonable attempt to notify.

In order to constitute a reasonable attempt to notify the debtor, EEOC must have used a mailing address for the debtor obtained from the IRS pursuant to 26 U.S.C. 6103(m)(2) within a period of 1 year preceding the attempt to notify the debtor, unless EEOC receives clear and concise notification from the debtor that notices from the agency are to be sent to an address different from the address obtained from IRS. Clear and concise notification means that the debtor has provided the agency with written notification, including the debtor's name and identifying number (as defined in 26 CFR 301.6109–1), the debtor's new address, and the debtor's intent to have the agency notices sent to the new address.

§ 1650.205 Consideration of evidence submitted as a result of notification of intent.

(a) *Consideration of evidence.* If, as a result of the notification of intent, EEOC receives notice that the debtor will submit additional evidence or receives additional evidence from the debtor within the prescribed time period, any referral to the IRS will be stayed until EEOC—

(1) Considers the evidence presented by the debtor;

(2) Determines whether or not all or a portion of the debt is still past-due and legally enforceable; and

(3) Notifies the debtor of its determination.

Failure to submit the evidence within 60 days from the date of notification will result in an automatic referral of the debt to IRS without further action by EEOC.

(b) *Notification to the debtor.* Following its review of the evidence, EEOC will issue a written decision notifying the debtor whether EEOC has sustained, amended, or canceled its determination that the debt is past-due and legally enforceable. The notice will advise the debtor of any further action to be taken and explain the supporting rationale for the decision.

(1) EEOC will notify the debtor of its intent to refer the debt to the IRS for offset against the debtor's Federal income tax refund if it sustains its decision that the debt is past-due and legally enforceable. EEOC will also notify the debtor whether the amount of the debt remains the same or is modified.

(2) EEOC will not refer the debt to the IRS for offset against the debtor's Federal income tax refund if it reverses its decision that the debt is past-due and legally enforceable.

§ 1650.206 Notification to Internal Revenue Service.

(a) Except as noted in paragraph (b) of this section, after EEOC's initial notification and referral of a debt to IRS for offset against a debtor's Federal income tax refund, EEOC will promptly notify IRS of any changes in the notification, if EEOC—

(1) Determines that an error has been made with respect to the information contained in the notification;

(2) Receives a payment or credits a payment to the account of the debtor named in the notification that reduces the amount of the debt referred to IRS for offset;

(3) Receives notification that the individual owing the debt has filed for bankruptcy under title 11 of the United States Code or has been adjudicated bankrupt and the debt has been discharged;

(4) Receives notification that an offset was made at a time when the automatic stay provisions of 11 U.S.C. 362 were in effect; or

(5) Refunds all or part of the offset amount to the debtor.

(b) EEOC shall not request the IRS to increase the amount of a debt owed by a debtor named in EEOC's original notification to IRS.

(c) If the amount of a debt is reduced after referral by EEOC and offset by the IRS, EEOC will refund to the debtor any excess amount and will promptly notify the IRS of any refund made by EEOC.

§ 1650.207 Administrative charges.

All administrative charges incurred in connection with the referral of the debts to the IRS will be assessed on the debt and thus increase the amount of the offset.

[FR Doc. 93-31710 Filed 12-30-93; 8:45 am]

BILLING CODE 6570-01-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 305

[FRL-4818-1]

RIN 2050-AC26

CERCLA Administrative Hearing Procedures for Claims Asserted Against the Superfund

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA or the Agency) is promulgating a final rule to implement section 112 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). CERCLA section 112 outlines procedures for payments of claims authorized pursuant to CERCLA section 111. Furthermore, EPA uses the procedures authorized by CERCLA section 112 to reimburse parties for response costs incurred pursuant to CERCLA section 122. EPA reimburses the parties through payment of claims asserted against the Hazardous Substance Superfund (the Fund). The claims authority allows EPA to reimburse a person for the costs incurred for responding to an actual or threatened release of hazardous substances, pollutants, or contaminants if that person has received prior approval (preauthorization) from EPA to conduct a response action. If EPA denies all or part of a claim against the Fund for the costs incurred in conducting a preauthorized response action, the adversely affected claimant may request an administrative hearing to review that decision. This final rule establishes procedures to request such a hearing and governs the course of the proceeding following the request.

EFFECTIVE DATE: This final rule is effective February 2, 1994.

ADDRESSES: The official record for this rulemaking is in the Superfund Docket, located at the United States Environmental Protection Agency, 401 M Street, SW., Room M 2615, Washington, DC 20460. The record is available for inspection by appointment only (Telephone—202-260-3046) between the hours of 9 a.m. and 4 p.m., Monday through Friday, excluding legal holidays. As provided in 40 CFR part 2, a reasonable fee may be charged for copying services.

FOR FURTHER INFORMATION CONTACT: Hugo Paul Fleischman, U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Hazardous Site Control Division, (Mail Code—5203G), 401 M Street, SW., Washington, DC 20460; Telephone—703-603-8769. An alternative contact is the Superfund Hotline; 1-800-424-9346 (TDD 800-553-7672), or in the Washington, DC area, (703) 920-9810 (TDD 703-486-3323).

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline:

I. Background
II. Response to Comments
III. Summary of Supporting Analyses

I. Background

EPA is today promulgating the final CERCLA administrative hearing procedures for claims asserted against the Superfund. Today's rule is based on an interim final rule with request for comments promulgated on February 8, 1993, at 58 FR 7704. The rationale for the rule and a discussion of its background and procedures may be found there. One commenter made two specific comments on the interim final rule.

II. Response to Comments

EPA received one comment in two specific areas. The first portion of the comment noted that "most procedures litigation rules, including the Federal Rules of Civil Procedure (FRCP), provide that Saturdays, Sundays, and legal holidays shall not be counted in calculating short time limits (e.g., ten days or less)." The commenter went on to note that the rule was at odds with such procedures. EPA notes that while the rule is not identical to the FRCP, there is a good reason for such departure. The procedures in this rule are designed to allow expedited hearings in accord with the time frames provided in CERCLA section 112. Nevertheless, litigants may seek an extension of the time for the Presiding Officer to render a final order in the case, or may extend that time frame by agreement of all parties. See 40 CFR 305.4(c). Furthermore, litigants may seek extensions of time for the filing of pleadings, documents, or motions. See 40 CFR 305.6(b). Therefore, because of the need for expedition, and the availability of extensions provided elsewhere in the rule, EPA believes that no change to the rule is necessary.

The second portion of the comment noted that the "service" rules "do not provide for service of documents on Federal agencies . . . from which we infer that the rules are not intended to apply to such." That inference is incorrect. Because the rule applied to Federal agencies that are potentially

responsible parties, EPA has corrected the final rule by adding procedures to serve Federal agencies at § 305.5(b)(1)(v). The amended rule provides that "(S)ervice upon an officer or agency of the United States shall be made by delivering a copy of the document to the officer or agency, or in any manner prescribed for service by applicable regulations. If the agency is a corporation, the document shall be served as prescribed in paragraph (iii) of this section." Like the rest of the rule, the new service provision is modeled on 40 CFR part 22.

The commenter also raised a "related question" regarding the manner and means by which Federal agencies are to be compensated for the costs they incur pursuant to the NCP and related plans. Such comment does not relate to the interim final rule and has been directed to the appropriate EPA official for response.

III. Summary of Supporting Analyses

Proposed and final rules issued by Federal Agencies are subject to several statutes and executive orders. These include Executive Order 12291 (superseded by Executive Order 12866 on September 1, 1993), the Regulatory Flexibility Act, and the Paperwork Reduction Act.

A. Executive Order Review

This rulemaking was submitted and reviewed by the Office of Management and Budget under Executive Order 12291. The rulemaking was non-major under the requirements of that Executive Order. Therefore, no Regulatory Impact Analysis was prepared.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 requires that a Regulatory Flexibility Analysis be performed for all rules that are likely to have a "significant economic impact on a substantial number of small entities." EPA certifies that this rule will not have a significant economic impact on a substantial number of small entities because all authorized costs and expenses are payable from the Fund. Further, this final rule imposes no capital expenditures, nor any compliance requirements on any business.

C. Paperwork Reduction Act

The final rule contains no information collection requirements which require approval by the Office of Management and Budget pursuant to 44 U.S.C. 3501 *et seq.*

List of Subjects in 40 CFR Part 305

Environmental protection, Administrative practice and procedures, Chemicals, Hazardous materials, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal.

Dated: December 16, 1993.

Carol M. Browner,

Administrator.

40 CFR part 305 is amended as follows:

PART 305—COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA) ADMINISTRATIVE HEARING PROCEDURES FOR CLAIMS AGAINST THE SUPERFUND

1. The authority citation for part 305 continues to read as follows:

Authority: 42 U.S.C. 9601 *et seq.*; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp. p. 193.

2. Section 305.5 is amended by adding paragraph (b)(2)(v) to read as follows:

§ 305.5 Filing, service, and form of pleadings and documents.

* * * * *

(b) * * *

(2) * * *

(v) Service upon an officer of agency of the United States shall be made by delivering a copy of the document to the officer or agency, or in any manner prescribed for service by applicable regulations. If the agency is a corporation, the document shall be served as prescribed in paragraph (b)(2)(iii) of this section.

* * * * *

[FR Doc. 93–32034 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 651

[Docket No. 931243–3343; I.D. No. 112293A]

Northeast Multispecies Fishery

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic Atmospheric Administration (NOAA), Commerce.

ACTION: Emergency interim rule.

SUMMARY: The Secretary of Commerce (Secretary) amends the regulations implementing the Fishery Management Plan for the Northeast Multispecies Fishery (FMP). This emergency interim rule implements: A 500-pound (226.8 kg) possession limit of haddock for all vessels permitted under 50 CFR 651.4 and to all vessels in possession of haddock from or in the exclusive economic zone (EEZ), except scallop dredge vessels, which are prohibited from possessing or landing haddock; a January through May closure of the area known as Closed Area II, except for lobster pot vessels and scallop dredge vessels; an expansion of Closed Area II by 20 minutes longitude to the west and 15 minutes latitude to the south, along its existing western and southern boundaries, intersecting with the Regulated Mesh Boundary line; a suspension of the February through May closure of the area known as Closed Area I, except for vessels using sink gillnet gear; a prohibition on transfer of fish at sea; and a ban on pair trawling in the multispecies fishery. The intended effect of this rule is to provide protection to depleted haddock and cod stocks.

EFFECTIVE DATES: January 3, 1994, through April 2, 1994.

ADDRESSES: Copies of the Environmental Assessment (EA) supporting this action may be obtained from Richard B. Roe, Regional Director, National Marine Fisheries Service, One Blackburn Drive, Gloucester, MA 01930.

FOR FURTHER INFORMATION CONTACT: Patricia A. Kurkul (Senior Fishery Policy Analyst, Northeast Region, NMFS), 508–281–9252.

SUPPLEMENTARY INFORMATION: The primary Northeast multispecies (groundfish) species have declined to record or near record low levels of stock abundance due largely to record high fishing mortality caused by increased fishing effort. To correct this, the New England Fishery Management Council (Council) developed Amendment 5 to the FMP, which has been submitted to the Secretary for review under the Magnuson Fishery Conservation and Management Act (Magnuson Act) and other applicable law. Amendment 5 contains proposals that the Council believes will eliminate the overfished condition of cod and yellowtail flounder over a 5-year period and haddock over a 10-year period. The measures proposed include: Reductions in fishing time; a moratorium on new permits; an increased minimum net mesh size; modifications to existing closed areas; additional closed areas and control areas for juvenile fish; possession limits on regulated species when possessing small mesh on board; and a possession limit on haddock. A proposed rule to implement these measures was

published on October 27, 1993 (58 FR 57774). However, a proposed possession limit of 5,000 pounds (2,268 kg) for haddock contained in Amendment 5 was disapproved on September 30, 1993. The Director, Northeast Region, NMFS (Regional Director) advised the Council on September 30, 1993, that the proposed haddock possession limit offered inadequate protection for that species, and the Council should seriously consider whether any haddock should be landed.

The Council previously recommended that an emergency action implemented last June, which prohibited the use of pair trawls and imposed a 2,500-pound (1,134-kg) haddock trip limit, be extended for an additional 90 days. This request was denied and the emergency action expired on September 7, 1993. The disapproval was based on the fact that haddock are not concentrated during the period of time covered by the extension and, therefore, the recommended management measures were not warranted under emergency rulemaking. The Regional Director requested the Council to consider more restrictive measures, including a meaningful trip limit for haddock. This was reiterated when the Council was informed that the 5,000-pound (2,268-kg) haddock trip limit proposed in Amendment 5 had been disapproved.

Of particular concern are the haddock stocks on both Georges Bank and in the Gulf of Maine, which are at all-time low levels of abundance. Adult stock biomass is lower now than at any point since the inception of stock assessments. Haddock landings in 1993, which reflect stock condition, are expected to be the lowest in recorded history. The stock condition and landings will continue to decline until such time that meaningful measures are implemented that will eliminate the overfished condition of the stocks and reduce the exploitation rate to levels that will allow significant rebuilding to take place.

The Council discussed this issue at its October 1993 meeting in conjunction with its discussion of an amendment to replace the disapproved portions of Amendment 5. The Council voted to develop an amendment to implement a 4,000-pound (1,814-kg) haddock trip limit and to increase the annual Closed Area II closed season from February through May, to January through June. The Council also voted to rescind the geographical expansion of Closed Area II proposed in Amendment 5, in part, as a compromise to the industry for imposing a longer time period for the closure. This represented a departure from Amendment 5, which calls for immediate expansion of the size of Closed Area II and, in year 3 and thereafter, an expansion in the duration of the closed season.

After adopting amended language for the disapproved measure in Amendment 5, the Council voted to request emergency Secretarial action to implement the same measures beginning January 1, 1994. In addition, the Council requested emergency implementation, beginning January 1, 1994, of a suspension of the closure of Closed Area I to vessels using other than sink gillnet gear and a prohibition on pair trawling, both of which are proposed in Amendment 5. NMFS determined, however, that some of the emergency measures recommended by the Council were inadequate to provide sufficient protection of these stocks, and that more restrictive measures must be implemented to provide essential protection particularly in light of new analysis of the condition of the haddock stocks.

The Regional Director presented the new analysis of the condition of the stocks to the Council at its November 23 Multispecies Oversight Committee meeting and at its December 8–9 Council meeting and, in response, the Council amended its recommendation on emergency action. The Council proposed: An immediate closure of the expanded Closed Area II (beginning January 1, 1994); a prohibition on pair trawling; a haddock possession limit between 500 (226.8 kg) and 1,000 pounds (453.6 kg), at the discretion of the Regional Director, and a request that the Regional Director consider whether scallop dredges should be prohibited from the haddock spawning area during the closure of Area II.

The Secretary concurs with the Council's recommendation and the Regional Director's determination that the haddock possession limit should be 500 pounds (226.8 kg). In making these determinations, the Secretary took into consideration that the haddock stocks are severely depleted. The 1992 spawning stock level for the Georges Bank stock is estimated to be 13,000 metric tons (mt), which is significantly lower than the 130,000 mt required to provide a maximum sustainable yield of 50,000 mt. The most recent assessment of the Georges Bank haddock stock conducted by the NMFS Stock Assessment Workshop determined that the fishing mortality rate in 1991 was 0.52. More recent information from a Canadian assessment indicates that the 1992 fishing mortality rate was 0.6 and is likely to be higher in 1993.

In determining an overfishing definition for the Georges Bank haddock stock, the Council chose a percent maximum spawning potential (%MSP) of 30 percent, which is equivalent to a fishing mortality rate of 0.4. If this rate were achieved, it would maintain the stock at its present level over the long term. Given the low stock level, though, this would not be enough to allow rebuilding to take place. Rebuilding can only be achieved if the fishing mortality rate is reduced well below this level. Based upon past history, it is estimated that an exploitation rate of about 0.1 (10 percent annual removal of the stock each year) would allow rebuilding to occur. This occurred for several years prior to a large incoming year class of haddock in 1975, which allowed the spawning stock to rebuild.

The current exploitation rate of haddock is approximately 0.37. A 500-pound (226.8 kg) haddock possession limit is expected to reduce the exploitation rate to about 0.1. Achieving this rate will be possible only if the trip limit is low enough to discourage targeting of haddock and highgrading, and it does not compromise enforcement efforts. The 500-pound (226.8 kg) possession limit is considered to be the average number of pounds of haddock per trip that would still be caught incidental to fishing for other species. Although any possession limit can provide incentive to target a species, 500 pounds (226.8 kg) is believed to be low enough to discourage targeting if vessel operators comply with the limit. A trip limit could also encourage "highgrading," (i.e., filling the trip limit with the highest value fish and discarding the rest). The prevalence of this problem will depend to some extent on the willingness of vessel operators to move out of an area with concentrations of haddock. Both of these potential situations will be closely monitored and appropriate action taken by the Regional Director in the event they are determined to be problems. Finally, a trip limit is expected to make enforcement of these haddock measures problematic. Compliance with the measures will also be closely monitored, and should enforceability become compromised, appropriate action will be taken by the Regional Director, including the possibility of implementing a prohibition on the possession of haddock by all vessels. To improve enforceability, this rule prohibits transfer of fish at sea, requires haddock to be stored separately from other fish, and requires all vessels to carry a standardized tote so the amount of haddock on board can be measured at sea.

The expansion of Closed Area II in area and time will provide additional

protection to the concentrations of haddock that occur in the area in this time period. The January closure will ensure that haddock beginning to concentrate in the area are provided the fullest protection. The expansion in size of the closed area is based on information obtained from interviews with fishermen, which indicate that large amounts of haddock are taken just outside the closed area.

Allowing the use of mobile gear in Closed Area I is justified because there have been few if any haddock present in the area for the last 10 years. This has been confirmed by research trawl surveys conducted by the NMFS Northeast Fisheries Science Center (NEFSC). The closure remains in effect for sink gillnet gear because of possible interaction between the gear and endangered or threatened marine mammals.

In addition to the expansion and early closure, the Secretary has determined that, because scallop vessels fish in Closed Area II during the period when haddock are congregated to spawn, all scallop dredge vessels should be prohibited from landing or possessing haddock to ensure that such vessels do not target these concentrations of haddock. While the Council requested that the Regional Director consider the question of whether scallop dredges should be prohibited from the area during the closure, and not a prohibition on landings, the information provided by the NEFSC does not support precluding scallopers from the closed area. Therefore, the lesser action is taken to reduce the impact on scallopers yet provide some protection to spawning haddock.

The Secretary has determined that it is appropriate to include a pair trawl prohibition in this emergency rule. Many in the fishing industry believe that a prohibition on pair trawl gear in the multispecies fishery is warranted as an emergency measure because it is a highly efficient gear, and its unlimited use during a period of severely declining haddock and cod stocks is counterproductive to the goal of reducing effort in an overfished fishery. Information from the NEFSC for 1992 indicates that, for some vessel classes, catch rates increase by a factor of 5.85 when using the gear. As a result, there has been an increase in its use in recent years. This prohibition is also included in proposed Amendment 5.

Classification

The Secretary has determined that this rule is necessary to respond to an emergency situation and is consistent with the Magnuson Act and other applicable law.

The Secretary finds for good cause that the reasons justifying promulgation of this rule on an emergency basis also make it impracticable and contrary to the public interest to provide notice and opportunity for public comment upon, or to delay for 30 days the effective date of these emergency regulations, under the provisions of sections 553(b) and (d) of the Administrative Procedure Act. However, all of the measures have received some public comment during Council meetings and in connection with the development of Amendment 5 to the FMP. Implementation of these emergency measures will provide much needed immediate protection to the declining haddock and cod stocks.

This rule is exempt from the requirements of the Regulatory Flexibility Act to prepare a regulatory flexibility analysis because the rule is issued without opportunity for prior public comment, and none has been prepared.

List of Subjects in 50 CFR Part 651

Fishing, Fisheries, Vessel permits and fees.

Dated: December 27, 1993.

Nancy Foster,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 651 is amended as follows:

PART 651—NORTHEAST MULTISPECIES FISHERY

1. The authority citation for part 651 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

2. In § 651.2, the definitions for *bottom-tending gillnet or sink gillnet gear, dredge or dredge gear, offload, pair trawl or pair trawling, scallop dredge vessel, standard box, standard tote*, and *transfer* are temporarily added, in alphabetical order, effective January 3, 1994 through April 2, 1994, to read as follows:

§ 651.2 Definitions.

* * * * *

Bottom-tending gillnet or sink gillnet means any gillnet, anchored or otherwise, that is designed to be, capable of being, or is fished on or near the bottom in the lower third of the water column.

Dredge or dredge gear means gear consisting of a mouth frame attached to a holding bag constructed of metal rings, or any other modification to this design, that can or is used in the harvest of Atlantic sea scallops.

Offload means to begin to remove, to remove, to pass over the rail, or otherwise take away fish from any vessel.

Pair trawl or pair trawling means to tow or towing a single net between two vessels for the purpose of, or that is capable of, catching multispecies finfish.

Scallop dredge vessel means any fishing vessel that uses or is equipped for using dredge gear and that has been issued or has applied for a Federal scallop permit.

Standard box means a box, typically constructed of wax-saturated cardboard or wood, designed to hold 125 pounds (56.6 kg) of fish plus ice, and that has a volume of not more than 5,100 cubic inches (2.95 cubic feet or 83.57 cubic dm).

Standard tote means a box typically constructed of plastic, designed to hold 100 pounds (45.3 kg) of fish plus ice, and that has a liquid capacity of 70 liters, or a volume of not more than 4320 cubic inches (2.5 cubic feet or 70.79 cubic dm).

Transfer means to begin to remove, to pass over the rail, or otherwise take away fish from any vessel and move them to another conveyance.

* * * * *

3. In § 651.7, paragraphs (a)(3), (a)(4), (a)(5), (a)(6), (a)(7), (b)(15), (b)(16), (b)(17), (b)(18), (b)(19), (b)(20), and (b)(21) are temporarily added and paragraph (b)(11) is temporarily suspended effective January 3, 1994, through April 2, 1994, to read as follows:

§ 651.7 Prohibitions.

(a) * * *

(3) Land haddock from, or possess haddock on board, a sea scallop dredge vessel as specified in § 651.28(a).

(4) Land, or possess on board a vessel, more than 500 pounds (226.8 kg) of haddock as specified in § 651.28(b) or violate any of the other provisions specified in § 651.28(b).

(5) Land or possess multispecies finfish harvested by means of pair trawling except under the provisions of § 651.20(d).

(6) Fish for multispecies finfish by means of pair trawling.

(7) Land, offload, remove, or otherwise transfer or attempt to land, offload, remove, or otherwise transfer fish from one vessel to another vessel.

(b) * * *

(15) Use, set, haul back, fish with, or have on board a vessel a sink gillnet in the area and during the time period described in § 651.21(c)(1).

(16) Enter the area described in § 651.21(c)(2) on a fishing vessel during the time period specified in § 651.21(c)(2), except as specified in § 651.21(c)(3).

(17) Land haddock from, or possess haddock on board, a sea scallop dredge vessel as specified in § 651.28(a).

(18) Land, or possess on board a vessel, more than 500 pounds (226.8 kg) of haddock in, or harvested from, the EEZ as specified in § 651.28(b) or violate any of the other provisions specified in § 651.28(b).

(19) Land or possess multispecies finfish harvested in, or from, the EEZ by means of pair trawling, except under the provisions of § 651.20(d).

(20) Fish for multispecies finfish in the EEZ by means of pair trawling.

(21) Land, offload, remove, or otherwise transfer, or attempt to land, offload, remove or otherwise transfer multispecies finfish from one vessel to another vessel, unless the multispecies finfish were harvested by a recreational fishing vessel or such vessels have not been issued a Federal multispecies permit and fish for multispecies finfish exclusively in state waters.

* * * * *

4. In § 651.20, paragraph (g) is temporarily added effective January 3, 1994, through April 2, 1994, to read as follows:

§ 651.20 Regulated mesh area and gear limitations.

* * * * *

(g) No vessel issued a permit under § 651.4 may pair trawl for multispecies finfish, as defined under § 651.2, except under the provisions of paragraph (d) of this section.

5. In § 651.21, paragraphs (a) introductory text, (a)(1), (a)(2), and (a)(3) are temporarily suspended, and paragraph (c) is temporarily added effective January 3, 1994, through April 2, 1994, to read as follows:

§ 651.21 Closed areas.

* * * * *

(c) *Georges Bank.* No person or vessel may fish within the following areas subject to the conditions and/or exceptions of this section.

(1) *Closed Area I.* No fishing vessel or person on a fishing vessel may use, set, haul back, fish with, or have on board a vessel a sink gillnet during the months of February through May in the area known as Closed Area I (Figure 6), which is bounded by six straight lines connecting the following points in the order stated:

Point	Latitude	Longitude
CI1	40°53′ N.	68°53′ W.
CI2	41°35′ N.	68°30′ W.
CI3	41°50′ N.	68°45′ W.
CI4	41°50′ N.	69°00′ W.
CI5	41°30′ N.	69°00′ W.
CI6	41°30′ N.	69°23′ W.
CI1	40°53′ N.	68°53′ W.

(2) *Closed Area II.* No fishing vessel or person on a fishing vessel may fish in, or be in, the area known as Closed Area II (Figure 6) during the months of January through May, except as specified in paragraph (c)(3) of this section. Closed Area II is bounded by four straight lines connecting the following points in the order stated:

Point	Latitude	Longitude
CII1	41°00′ N.	67°20′ W.
CII2	41°00′ N.	66°35.8′ W.
G5	41°18.6′ N.	66°24.8′ W. (the U.S.-Canada Maritime Boundary)
CII3	42°22′ N.	67°20′ W. (the U.S.-Canada Maritime Boundary)
CII1	41°00′ N.	67°20′ W.

(3) *Exceptions.* Paragraph (c)(2) of this section does not apply to persons on fishing vessels or fishing vessels:

(i) Fishing with or using pot gear designed and used to take lobsters;

(ii) Fishing with or using dredges designed and used to take scallops; or

(iii) Seeking safe haven from storm conditions in waters adjacent to the western edge of Closed Area II. Such fishing vessels may transit through Closed Area II providing that:

(A) Gale, storm or hurricane conditions are posted for the area by the National Weather Service;

(B) Such vessels do not fish in the area;

(C) Fishing gear is stowed in accordance with § 651.20(f); and

(D) The vessel provides notice to patrolling U.S. Coast Guard aircraft or vessel in the vicinity of Georges Bank by high frequency radio (2.182 khz) of its intention to transit the closed area and the time and position when the vessel enters the area and the time and position when the vessel exits the closed area.

6. Sections 651.28 and 651.29 are temporarily added effective January 3, 1994, through April 2, 1994, to read as follows:

§ 651.28 Haddock possession limits.

(a) *Scallop dredge vessels.*

(1) No person owning or operating a scallop dredge vessel issued a permit under § 651.4 may land, or possess on board a vessel, haddock.

(2) No person operating a scallop dredge vessel may possess haddock in, or harvested from, the EEZ.

(b) *Other vessels.*

(1) No person owning or operating a vessel issued a permit under § 651.4 may land, or possess on a vessel, more than 500 pounds (226.8 kg) of haddock.

(2) No person may possess on a vessel more than 500 pounds (226.8 kg) of haddock in, or harvested from, the EEZ.

(3) Vessels subject to the haddock possession limit shall have on board the vessel at least one standard box or one standard tote.

(4) The haddock stored on board the vessel shall be retained separately from the rest of the catch and shall be readily available for inspection and for measurement by placement of the haddock in a standard box or standard tote if requested by an authorized officer.

(5) The haddock possession limit is equal to 500 pounds (226.8 kg) or its equivalent as measured by the volume of 4 standard boxes or 5 standard totes.

§ 651.29 Transfer-at-sea.

(a) Vessels permitted under § 651.4 are prohibited from transferring or attempting to transfer fish from one vessel to another vessel.

(b) All vessels are prohibited from transferring or attempting to transfer multispecies finfish from one vessel to another vessel.

7. Figure 2 to part 651 is temporarily suspended, effective January 3, 1994, through April 2, 1994, and Figure 6 is temporarily added effective January 3, 1994, through April 2, 1994.

BILLING CODE 3510–22–P

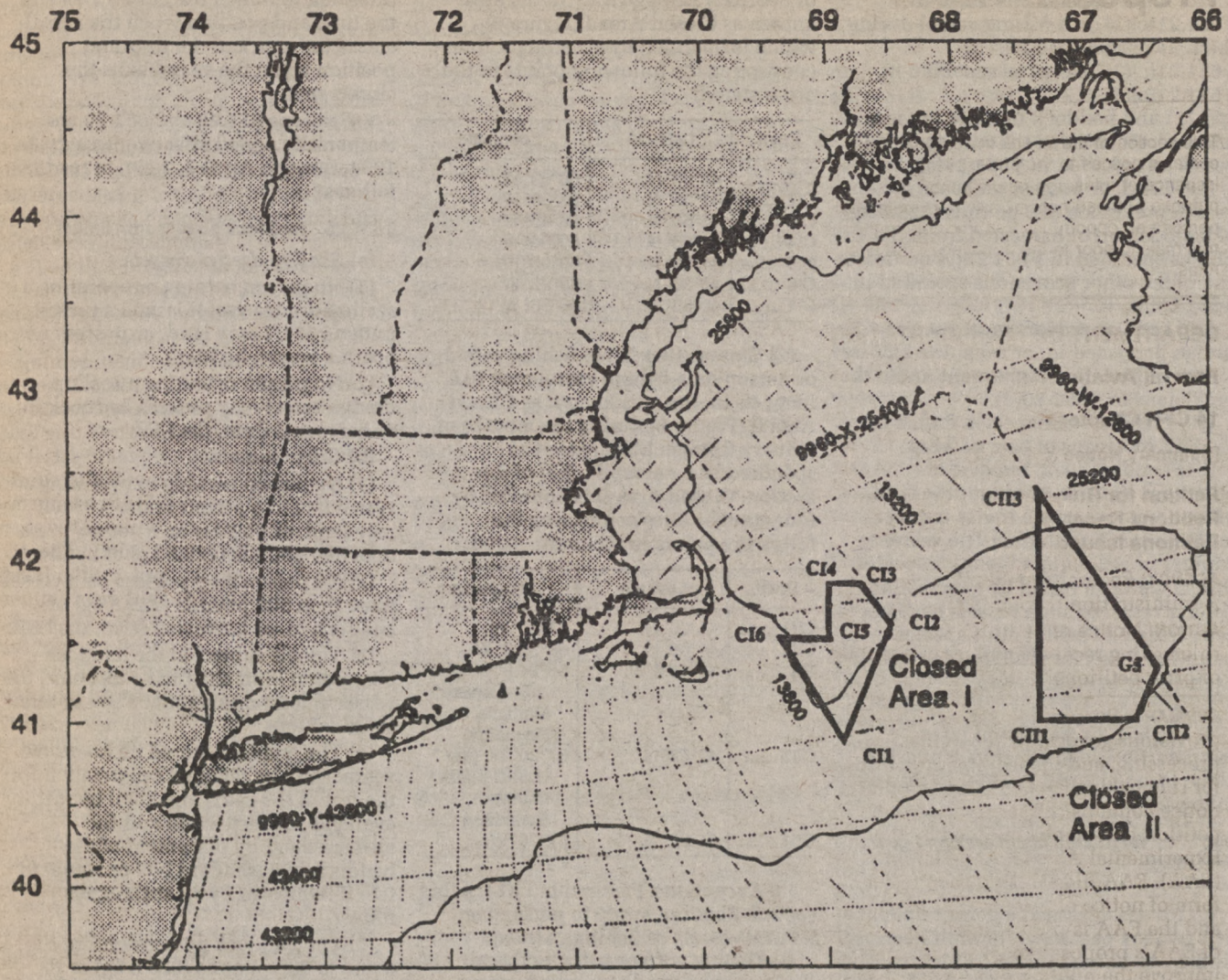

Figure 6: Closed Areas

[FR Doc. 93–32010 Filed 12–28–93; 3:22 pm]

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Proposed Rules

Federal Register
Vol. 59, No. 1
Monday, January 3, 1994

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Chapter I

[Summary Notice No. PR–93–20]

Petition for Rulemaking; Summary of Petitions Received; Dispositions of Petitions Issued

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of petitions for rulemaking received and of dispositions of prior petitions.

SUMMARY: Pursuant to FAA's rulemaking provisions governing the application, processing, and disposition of petitions for rulemaking (14 CFR Part 11), this notice contains the substance of a petition for rulemaking filed by the Experimental Aircraft Association, (EAA). EAA filed this petition in the form of notice of proposed rulemaking, and the FAA is publishing the substance of EAA's proposal verbatim, in order to improve the public's awareness of, and participation in, this aspect of FAA's regulatory activities. Neither publication of this notice nor the inclusion or omission of information is intended to affect the legal status of any petition or its final disposition. The FAA is publishing EAA's petition without comment or endorsement.

DATES: Comments on petitions received must identify the petition docket number involved and must be received by March 4, 1994.

ADDRESSES: Send comments on any petition in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attn: Rules Docket No. 27517, 800 Independence Avenue, SW., Washington, DC 20591.

The petition, any comments received, and a copy of any final disposition are filed in the assigned regulatory docket and are available for examination in the Rules Docket (AGC–10), Room 915G, FAA Headquarters Building (FOB 10A), 800 Independence Ave., SW., Washington, DC 20591; telephone (202) 267–3132

FOR FURTHER INFORMATION CONTACT: Mr. Frederick M. Haynes, Office of Rulemaking (ARM–1), Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 267–3939.

This notice is published pursuant to paragraphs (b) and (f) of § 11.27 of part 11 of the Federal Aviation Regulations (14 CFR part 11).

Issued in Washington, DC on December 22, 1993.

Donald P. Byrne,

Assistant Chief Counsel, Regulations Division.

Petitions for Rulemaking

Docket No.: 27517.

Petitioner: Experimental Aircraft Association.

Regulations Affected: 14 CFR Part 61.

Description of Rulechange Sought:

SUMMARY: Experimental Aircraft Association (EAA) submits this NPRM as a proposal to amend several sections of the Federal Aviation Regulations (FAR) as they apply to student and recreational pilot activity. Specifically, student and recreational pilots will be permitted to hold at least a current third-class medical certificate issued under part 67 of this chapter or certify that he or she has no known medical defect that makes him or her unable to pilot an aircraft, all certificated pilots will be permitted the same option when exercising the privileges of a recreational pilot certificate. Further, the holder of a flight instructor certificate with an appropriate category and class rating, while holding at least a current third-class medical certificate issued under part 67 of this chapter or certifying that he or she has no known medical defect that makes him or her unable to pilot an aircraft, will be permitted to instruct student pilots seeking a recreational pilot certificate or the holder of a recreational pilot certificate seeking advanced training. The proposed amendments will permit additional flight activity, encouraged increased proficiency by lowering the cost of recreational flying and assist in the revitalization of general and sport aviation by relieving a burdensome and expensive regulation, without a degradation of aviation safety. The Federal Aviation Administration (FAA) publishes this NPRM without comment.

Background

Current medical certification requirements have existed for decades and have remained unchanged in the face of medical advancement. In fact, accident summary data from 1986 through 1992 indicates that the percentage of accidents involving medical causal factors is lower for those recreational type activities that do not require medical certification than those activities that do require medical certification. During those seven years, there were 761 accidents in lighter-than-air aircraft and sailplanes. These operations do not require FAA medical certification. Only one of these 761 accidents showed a medical cause resulting in a .13% of total accidents. Of general aviation operations requiring medical certification, there were 46,976 total accidents, 99 of which (.21%) showed medical cause. During this same time frame, medical causal accidents as a part of the total were .19% for amateur-built aircraft and .16% for airplanes less than 12,500 pounds. A safety problem is *not* evident for basic aircraft used for limited recreational purposes. (See the following chart):

ACCIDENT SUMMARY

[January 1, 1986 to December 31, 1992]

	Total accidents all causes	Medical cause accidents	Percent of accidents medical causal
Lighter-than-air	327	0	0.00
Sailplanes	434	1	0.23
All "No Medical Req."	761	1	0.13

ACCIDENT SUMMARY—Continued

[January 1, 1986 to December 31, 1992]

	Total accidents all causes	Medical cause accidents	Percent of accidents medical causal
Rotorcraft	2126	5	0.24
Other < 12,500	36831	58	0.16
Other > 12,500	5983	32	0.53
Amateur-built	2036	4	0.20
All "Medical Req."	46976	99	0.21

Data source: Ben Morrow (ACE–103)

This proposal would amend the regulations to permit qualified airmen to operate U.S. registered general aviation airplanes for sport and recreational purposes with self-certification medicals. Pilots would also be permitted to receive appropriate instruction from appropriately-rated individuals with an active interest in small aircraft operated for sport and recreation. Current requirements for a third class medical certificate for individuals engaged in recreational flying in small, slow airplanes is without justification from a safety standpoint. There is documented information that safety is not being compromised by the operation of other recreational aircraft (such as sailplanes and hot air balloons) as well as ultralight vehicles by those not regulatorily encumbered by a requirement for a third class medical certificate.

There is widespread concern about the current health and future growth opportunities for sport and general aviation. Sport and general aviation are the foundation of the entire air transportation system in the United States. The activities of sport and general aviation provide the support of the aviation infrastructure including maintenance, airport operators, airport service companies (fixed base operators), and the pipeline of requirement replacement parts. It is general and sport aviation that provide the involvement of the majority of individuals involved in aviation; provide the training necessary for all segments of aviation, including business, corporate, commercial and military aviation; and provide the proficiency for most flight personnel.

Trends and statistics of new airplane manufacturing and pilot certificates issued are well known to the FAA and to the aviation community. These statistics along with a deteriorating condition of airport facilities availability clearly show the current state of affairs for general aviation.

Well publicized as contributing factors to this condition are issues of product liability for aircraft and parts manufacturing, and operating cost factors. Other major factors—not so well publicized—are those of regulatory burden and costs. These regulatory costs continue to increase through requirements for additional flight training, mandatory equipment on aircraft, mandatory inspections and airspace requiring avoidance which results in added flight time and operating expense. All of these economic cost factors are doubly burdensome on the recreational segment of general aviation since these costs are not deductible or justified as a "business expense." Opening the opportunity of flight through this amendment could assist in reversing the negative trends in general aviation.

The Proposal

This NPRM proposes to amend part 61 of the FAR (14 CFR Part 61) to permit student pilots seeking a recreational pilot certificate, the holder of a recreational pilot certificate, and those appropriately certificated pilots (private, commercial and airline transport pilot) while exercising the privileges of a recreational pilot certificate to operate U.S. registered general aviation aircraft (as limited by the recreational pilot certificate) with at least a third class medical certificate issued under part 67 of the FAR or to certify that he or she has no known medical defects that makes him or her unable to pilot an aircraft. Additionally, a certificated flight instructor with at least a third class medical certificate issued under part 67 of the FAR or certify that he or she has no known medical defects that makes him or her unable to pilot an aircraft may give flight instruction to student pilots seeking a recreational pilot certificate or the holder of a recreational pilot certificate seeking advanced training.

The exercise of the recreational pilot privileges permitting flight without the requirement for a third class medical certification will continue to be very limited in scope. Section 61.101 "Recreational pilot privileges and limitations" presently states:

(a) A recreational pilot may—

(1) Carry not more than one passenger; and

(2) Share the operating expenses of the flight with the passenger.

(3) Act as pilot-in-command of an aircraft only when—

(i) The flight is within 50 nautical miles of an airport at which the pilot has received ground and flight instruction from an authorized instructor certificated under this part;

(ii) The flight lands at an airport within 50 nautical miles of the departure airport; and

(iii) The pilot carries, in that pilot's personal possession, a logbook that has been endorsed by the instructor attesting to the instruction required by paragraph (a)(3)(i) of this section.

(b) Except as provided in paragraphs (f) and (g) of this section, a recreational pilot may not act as pilot-in-command of an aircraft—

(1) That is certificated—

(i) For more than four occupants;

(ii) With more than one powerplant;

(iii) With a powerplant of more than 180 horsepower; or

(iv) With retractable landing gear.

(2) That is classified as a glider, airship, or balloon;

(3) That is carrying a passenger or property for compensation or hire;

(4) For compensation or hire;

(5) In furtherance of a business;

(6) Between sunset and sunrise;

(7) In airspace in which communication with air traffic control is required;

(8) At an altitude of more than 10,000 feet MSL or 2,000 feet AGL, whichever is higher;

(9) When the flight or surface visibility is less than 3 statute miles;

(10) Without visual reference to the surface;

(11) On a flight outside the United States;

(12) To demonstrate that aircraft in flight to a prospective buyer;

(13) That is used in a passenger-carrying airlift and sponsored by a charitable organization; and

(14) That is towing any object.

(c) A recreational pilot may not act as a required pilot flight crew member on any aircraft for which more than one pilot is required by the type certificate of the aircraft or the regulations under which the flight is conducted, except when receiving flight instruction from an authorized flight instructor on board an airship and no person other than a required flight crew member is carried on the aircraft.

(d) A recreational pilot who has logged fewer than 400 flight hours and who has not logged pilot-in-command time in an aircraft within the preceding 180 days may not act as pilot-in-command of an aircraft until the pilot has received flight instruction from an authorized flight instructor who certifies in the pilot's logbook that the pilot is competent to act as pilot-in-command of the aircraft. This requirement can be met in combination with the requirements of section 61.56 and 61.57 at the discretion of the instructor.

(e) The recreational pilot certificate issued under this subpart carries the notation "Holder does not meet ICAO requirements."

(f) For the purpose of obtaining additional certificates or ratings, while under the supervision of an authorized flight instructor, a recreational pilot may fly as sole occupant of an aircraft—

(1) For which the pilot does not hold an appropriate category or class rating;

(2) Within airspace that requires communication with air traffic control; or

(3) Between sunset and sunrise, provided the flight or surface visibility is at least 5 statute miles.

(g) In order to fly solo as provided in paragraph (f) of this section, the recreational pilot must meet the appropriate aeronautical knowledge and flight training requirements of section 61.87 for that aircraft. When operating an aircraft under the conditions specified in paragraph (f) of this section, the recreational pilot shall carry the logbook that has been endorsed for each flight by an authorized pilot instructor who—

(1) Has given the recreational pilot instruction in the make and model of aircraft in which the solo flight is to be made;

(2) Has found that the recreational pilot has met the applicable requirements of section 61.87; and

(3) Has found that the recreation pilot is competent to make solo flights in accordance with the logbook endorsement.

(h) Notwithstanding paragraph 61.101(a)(3), a recreational pilot may for the purpose of obtaining an additional certificate or rating, while under the supervision of an authorized flight instructor, act as pilot-in-command of an aircraft on a flight in excess of 50 nautical miles from an airport at which flight instruction is received if the pilot meets the flight training requirements of section 61.93 and in that pilot's personal possession is the logbook that has been endorsed by an authorized instructor attesting that:

(1) The recreational pilot has received instruction in solo cross-country flight and the training described in section 61.93 applicable to the aircraft to be operated, and is competent to make solo cross-country flights in the make and model of aircraft to be flown, and

(2) The instructor has reviewed the student's preflight planning and preparation for the specific solo cross-country flight and the recreational pilot is prepared to make the flight safely under the known circumstances and subject to any conditions listed in the logbook by the instructor.

The only amendments to section 61.101 by this proposal would be to provide for the removal of the 50 nautical mile limitation as an *option* for the holder of a recreational pilot certificate. To remove this limitation the recreational pilot would be required to meet the flight training requirements of section 61.93, the aeronautical experience requirements of sections 61.109(a) (1) and (b) or 61.113(a)(1) (i) and (a)(2)(i), as appropriate, and receives and endorsement from an authorized flight instructor in his or her logbook to remove the 50 mile limitation.

It is proposed that any certificated pilot exercising the flight privileges of a recreational pilot certificate would be limited by the privileges and limitations of a recreational pilot certificate. These limitations provide an equivalent level of safety in that operations of basic aircraft for sport and recreation only are permitted. Of course, for those pilots who have received flight training and certification for cross-country, night flight and flight into airspace requiring communication with air traffic control—private, commercial and airline transport—those specific recreational pilot limitations would not apply.

EAA unequivocally states that this rulemaking does not promote the operation of aircraft envisioned under this proposed amendment to part 61 could only arise out of the exercise of an FAA pilot certificate, the customary self-certification of a proper physiological condition prior to flight will ensure aircraft operations by only medically qualified airmen. Further, the usual pilot-peer-group observation, as well as typical FAA surveillance activities, will act as a cross-check to identify the rare individual who, when not medically qualified, might attempt to operate an aircraft.

EAA endorses and encourages all FAA enforcement efforts which promote safe flying activities. Flying is a privilege which requires responsibility on the part of the airmen. Historically, those who have invested the time and money to earn an FAA Airman Certificate display the responsibility to avoid operations which could lead to the loss of that certificate. Those unwilling to act accordingly can lose their privileges to FAA enforcement measures. While EAA promotes the expansion of flying privileges to a greater number of participants, it does not endorse flight by those medically unqualified to act as pilot-in-command of an aircraft.

It should be specifically noted that the federal government, in section 67.19(c), already acknowledges the need for a private pilot "to accept reasonable risks to his or her person and property that is not acceptable in the exercise of commercial or airline transport privileges . . . " Further, a pilot must "self certify" his or her physiological condition for the safe conduct of *each* flight prior to exercising the privileges of *any* pilot certificate. The immediate proposal is based on these existing regulations.

Additional Issues and Statements

There are a number of issues concerning the subject of flight instruction under this amendment. These include medical qualifications of the individual providing the instruction, documentation for student pilot certification and transition of an individual instructed only for recreational pilot purposes to a fully-privileged private pilot.

There has been discussion as to what qualifications will be necessary to provide instruction in this situation. This question has arisen largely because: a number of sportplane models currently undergoing FAA certification have been available in the past as "two-place ultralight trainers;" and, under an exemption to the FARs for flight instruction, individuals without an FAA flight instructor certificate and FAA medical certificate have been permitted to provide flight instruction.

Since under the amendments called for in this NPRM, the aircraft will be a certificated airplane being operated by a certificated pilot or candidate for a

pilot's certificate, flight instruction would be appropriately given an individual holding an FAA flight instructor certificate. The medical certification of a flight instructor in this situation will be as currently required by the FAR. Section 61.19(d)(1) provides that "a flight instructor certificate is effective only while the holder has a current pilot certificate and a medical certificate appropriate to the pilot privileges being exercised . . . " Therefore, an individual with a current CFI certificate, and otherwise appropriately rated, but without a medical certificate, could provide instruction to a candidate for a recreational pilot certificate or to the holder of a recreational pilot certificate seeking additional training. Additionally, current regulations permit that flight instructions can be provided by a CFI without a valid medical certificate if that instruction is being provided to a certificated individual with a current medical certificate who is qualified to serve as pilot-in-command of that aircraft. An example of this would be a "make and model" check-out or a biennial or annual flight review.

Further, this amendment would not preclude an individual from providing ultralight vehicle flight instruction under an FAA-recognized ultralight training program in a vehicle make and model identical to a sportplane that is being operated legally as an ultralight vehicle trainer. Therefore, this action should in no way affect the existence of ultralight vehicle trainer. Therefore, this action should in no way affect the existence of ultralight vehicle training opportunities for individuals participating in any FAA-recognized ultralight training programs.

As this amendment would eliminate the need for the paperwork involved in the issuance of a third class medical, there would need to be a method provided for documenting the student pilot status. Currently a medical certificate (issued by an AME) has a dual purpose of providing a student pilot's license after appropriate endorsements by a flight instructor. A replacement of this method would have to be provided. EAA recommends the system currently in place for sailplane student pilots, with the student pilot license being issued by an FAA inspector or designated pilot examiner.

The final issue is that of transition by an individual from recreational pilot privileges to a private pilot certificate. Should an individual desire to expand to the full privileges of a private pilot (for example, to operate at night and/or in areas requiring communication with air traffic control), additional flight instruction, logbook entries and examination as currently delineated in the FARs would be required. All instructional flight hours received and other logged hours would be credited towards any regulations necessary to provide for the additional privileges.

Regulatory Evaluation

Regulatory Evaluation Summary

This section summarizes the regulatory evaluation on the proposed amendments to 14 CFR part 61—to provide expanded recreational flight privileges. This summary and full regulatory evaluation quantify, to the extent practicable, estimated costs to the private sector, consumers, and Federal, State and local governments as well as anticipated benefits.

Executive Order 12291, February 17, 1981, directs Federal agencies to promulgate new regulations or modify existing regulations only if potential benefits to society for each regulatory change outweighs potential costs. The Executive Order requires the preparation of a Regulatory Impact Analysis of all "major" rules except those responding to emergency situations or other narrowly defined emergencies. A "major" rule is one that is likely to result in an annual effect on the economy of $100 million or more, a major increase in consumer costs, or a significant adverse effect on competition, or that is highly controversial.

This proposed rule is not "major" as defined in the Executive Order; therefore, a full regulatory impact analysis that includes the identification and evaluation of cost-reducing alternatives to this proposed rule has not been prepared. This section contains a Regulatory Flexibility Determination required by the Regulatory Flexibility Act (P.L. 96–354) and an International Trade Impact Assessment.

Benefit Analysis

Activity under the amended regulation would be limited to recreational pilot privileges and limitations. The equivalent level of safety will be assured due to a number of factors:

- The flight activities proposed compare reasonably with the complexity of existing operations of hot air balloons, gliders and motorized gliders—that is, for recreational purposes (and appropriate flight instruction) only. Other private pilot, commercial and airline transport pilot privileges include the opportunity for IFR operations and operation of complex aircraft. These complexities which include higher stress situations than recreational flying, would not be permitted under the amended regulation; thereby ensuring a current level of safety for those operations.
- This amendment would permit holders of airman certificates to operate airplanes of *less* complexity that are currently operated by those same individuals. The amendment would permit certificated private pilots, for example, to operate a simple, light sportplane or equivalent without a valid third class medical certificate. The complexity of the operation would, in fact, be limited by the regulations governing recreational pilots. If such an individual does hold an appropriate FAA medical certificate, they may exercise the *full* privileges of their certificate in any aircraft in which they are rated.
- Operation under this amendment would be limited to sport and recreational purposes only with the understanding that flight instruction could be received by such an individual in furtherance of these limited privileges.
- An equivalent level of safety should also be evident since the operation of mechanically similar two-seat aircraft has been ongoing for a number of years (in ultralight flight training under exemptions to Part 103 of the FAR) without any significant accident or incidents caused by pilot incapacitation.

Further, safety would be enhanced as a result of the increased flying that will be promoted by this regulatory relief. It is commonly known that increased proficiency contributes to safe flight operations. By the encouragement of more flight activity, this proposal will improve aviation safety.

This amendment is in the public interest in that it serves as only an option—not a requirement—for appropriately qualified individuals to operate aircraft with specific limitations. In this regard, the requested action would not serve as a burden nor infringement on any other individual or group of individuals.

Finally, the amendment would be the opportunity to assist in the revitalization of the economically distressed general aviation industry. Singularly, the requested action will not fix all of general aviation ills, however, in conjunction with and support of other activities, such as the eminent availability of new aircraft models under the primary category sportplane certification opportunities, the proposal will serve a vital function in the larger picture of general aviation revitalization. As noted earlier, general and sport aviation are the foundation

upon which the United States air transportation system rests. This community provides the flight training, proficiency and infrastructure support that comprise the total system. Additional justification of the public value of healthy general aviation activity in the United States can be found in the FAA's General Aviation Action Plan.

Cost Analysis

Considerable regulatory and economic relief would be provided by this amendment. It is conservatively estimated that ten percent of all certificated pilots would take advantage of the reduced regulatory burden of this amendment in exchange for the limited recreational privileges. Assuming a third class medical examination to cost $50.00, this amendment to the regulation would relieve $3.415 million in regulatory cost every two years (based on 683,000 pilots). Additionally, the thousands of pilots that have discontinued flying and certificated flight instructors who have discontinued instructing over the years for a variety of personal and fiscal reasons, may be encouraged to return to the ranks of those enjoying flying as a recreational outlet and teaching flying at that level. This would also provide tens of thousands of dollars of regulatory relief per year.

Added public benefit would be gained by eventual reduction in FAA manpower to administer the airmen medical certification records. While this "government cost savings may not occur during the near term, eventually the rule change would reduce the administrative burden of medical certification for certain limited flight activities thereby reducing costs for the FAA.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1980 (Pub. L. 96–511, there are no requirements for information collection associated with this proposed rule.

Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) ensures that small entities are not unnecessarily and disproportionately burdened by Government regulations. The RFA requires agencies to review rules that may have a significant economic impact on a substantial number of small entities.

The small entities that this amendment could potentially affect are the aviation service providers (fixed base operators) and suppliers of general aviation parts. These providers and suppliers will be positively affected by the increased flight activity that results from this rulemaking. The additional requirement for replacement parts, fuel, flight training and maintenance services will be a positive economic benefit from the flight activity.

International Trade Impact Assessment

The proposed rule would have negligible effect on the sale of foreign aviation products or services in the United States. However, there could be a positive indirect impact on the sale of U.S. products or services in foreign countries. This indirect benefit will result from the positive impact this regulation will have on the fiscal health of U.S. product and service providers as an outcome of increased flight activity.

Federalism Implications

This proposed regulation would 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. Therefore, in accordance with Executive Order 12612, preparation of a Federalism assessment is not warranted.

Conclusion

In view of the overall benefit to aviation, EAA believes that the proposed rule to provide expanded recreational flight privileges is cost-beneficial. For the reasons discussed under "Regulatory Evaluation," EAA has determined that this proposed regulation is not a "major rule" under Executive Order 12291 and is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). It is certified that this proposal, if adopted, would have a positive impact on a number of small entities.

A summary of the petitioner's proposed changes follows:

§ 61.3(c) Medical certificate. Except for free balloon pilots piloting balloons, glider pilots piloting gliders, and pilots piloting aircraft while exercising the privileges and limitations in § 61.101 for recreational pilot, no person may * * *

§ 61.83(c) Hold at least a current third-class medical certificate issued under part 67 of this chapter, or, in the case of glider or free balloon operations or while seeking a recreational pilot certificate, certify that he or she has no known * * *

§ 61.85(b) An FAA operations inspector or designated pilot examiner, accompanied by a current FAA medical certificate, or in the case of an application for a glider or free balloon or recreational pilot certificate it may be accompanied * * *

§ 61.96(c) Hold at least a current third-class medical certificate issued under part 67 of this chapter or certify that he or she has no known medical defect that makes him or her unable to pilot the aircraft.

§ 61.103(3) Except as provided in paragraph (i) of this section, act as pilot-in-command * * *

§ 61.101(i) Notwithstanding paragraph 61.101(a)(3), a recreational pilot may operate an aircraft in excess of 50 nautical miles without authorization by a flight instructor for each flight when the pilot meets the flight training requirements of § 61.93, the aeronautical experience requirements of § 61.109(a)(1) and (b) or 61.113(a)(1)(i) and (a)(2)(1), as appropriate, and receives an endorsement in his or her logbook to remove the 50 mile limitation from an authorized flight instructor.

[FR Doc. 93–31871 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–13–M

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14 CFR Part 39

[Docket No. 93–ANE–48]

Airworthiness Directives; Textron Lycoming Reciprocating Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes to supersede an existing airworthiness directive (AD), applicable to certain Textron Lycoming reciprocating engines, that currently requires replacement of sintered iron impellers in oil pumps. This action would continue to require replacement of sintered iron impellers, but would also require replacement of aluminum impellers. This proposal is prompted by reports of additional oil pump failures caused by aluminum impellers, which do not have the reliability of the hardened steel impellers. The actions specified by the proposed AD are intended to prevent an oil pump failure due to impeller failure, which could result in an engine failure.

DATES: Comments must be received by March 4, 1994.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 93–ANE–48, 12 New England Executive Park, Burlington, MA 01803–5299. Comments may be inspected at this location between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from Textron Lycoming, Reciprocating Engine Division, 652 Oliver St., Williamsport, PA 17701. This

information may be examined at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT: Nicholas Minniti, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 181 South Franklin Ave., Room 202, Valley Stream, NY 11581; telephone (516) 791–7421, fax (516) 791–9024.

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 should 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 notice may be changed in light of the comments received.

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 notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 93–ANE–48." 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, New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 93–ANE–48, 12 New England Executive Park, Burlington, MA 01803–5299.

Discussion:

On August 14, 1981, the Federal Aviation Administration (FAA) issued AD 81–18–04, Amendment 39–4199 (46 FR 43134, August 27, 1981), to require replacement of sintered iron oil pump impellers and oil pump shafts with impellers and shafts made of aluminum or hardened steel in certain Textron Lycoming reciprocating engines. That action was prompted by reports of oil pump failures. Subsequent to the publication of AD 81–18–04, the FAA issued two revisions to AD 81–18–04 they are: 81–18–04R1, Amendment 39–4258 (46 FR 56157, November 16, 1981), effective November 19, 1981, and AD 81–18–04R2, Amendment 39–4395 (47 FR 23691, June 1, 1982), effective June 7, 1982. That condition, if not corrected, could result in an oil pump failure due to impeller failure, which could result in an engine failure.

Since the issuance of AD 81–18–04R2, the FAA has received reports of additional oil pump failures. The FAA has determined that some sintered iron impellers and shafts are still in service, as some engines have not reached the replacement time specified in that AD. The FAA has also determined that the aluminum impellers and shafts do not have the reliability of the hardened steel impellers and shafts. Therefore, aluminum impellers and shafts must be replaced with hardened steel impellers and shafts after no more than 750 hours time in service.

The FAA has reviewed and approved the technical contents of the following service bulletins (SB): Avco Lycoming SB No. 381, Revision C, dated November 7, 1975; Avco Lycoming SB No. 385, Revision C, dated October 3, 1975; Avco Lycoming Textron SB No. 454, Revision B, dated January 2, 1987; Avco Lycoming Textron SB No. 455, Revision D, dated January 2, 1987; and Textron Lycoming SB No. 456, Revision F, dated February 8, 1993. These SB's describe procedures for replacing sintered iron and aluminum impellers and shafts with hardened steel impellers and shafts.

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would supersede AD 81–18–04 R2 to require replacing sintered iron and aluminum impellers and shafts with hardened steel impellers and shafts. Engines affected by Textron Lycoming SB No. 456, Revision F, dated February 8, 1993, must have their sintered iron impellers replaced with hardened steel impellers and shafts within 100 hours time in service, or no later than one year after the effective date of this AD, whichever occurs first. This calendar end-date has been determined based on Textron Lycoming's analysis that the sintered iron impellers suffer from rust, and consequently a loss in strength, after an extended period of time in service. Some of these impellers have been in service for up to 20 years.

There are approximately 4,000 engines of the affected design in the worldwide fleet. The FAA estimates that 2,400 engines installed on aircraft of U.S. registry would be affected by this proposed AD, that it would take approximately 9 work hours per engine to accomplish the proposed actions, and that the average labor rate is $55 per work hour. Required parts would cost approximately $740 per engine. Based on these figures, the total cost impact of the proposed AD on U.S. operators is estimated to be $2,964,000. This figure is based on the assumption that none of the affected engines installed on U.S. Registry, have hardened steel impellers installed.

The regulations proposed herein would 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. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 14 CFR part 39 of the Federal Aviation Regulations as follows:

PART 39—AIRWORTHINESS DIRECTIVES

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

Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing amendment 39–4395, and by adding a new airworthiness directive to read as follows:

Textron Lycoming: Docket No. 93–ANE–48. Supersedes AD 81–18–04 R2, Amendment 39–4395.

Applicability: Textron Lycoming O–235, O–290–D, O–290–D2, O–320, IO–320, AIO–320, AEIO–320, LIO–320, O–340, O–360, IO–360, AIO–360, AEIO–360, AEIO–360, HO–360, HIO–360, LO–360, LIO–360, TIO–360, TO–360, LTO–360, VO–360, IVO–360, O–540, and IO–540 series reciprocating engines, except for the following models: O–320–H2AD, O–360–E1A6D, LO–360–E1A6D, TO–360–E1A6D, LTO–360–E1A6D, IO–540–P1A5, IO–540–R1A5, IO–540–S1A5, and O–540 and IO–540 series engines built with large capacity oil pumps and dual magnetos designated with "5D" in the model suffix; for example, IO–540–K1A5D. These engines are installed on but not limited to the following aircraft: various models of single and twin engine powered Cessna, Piper, Mooney, Beech, Gulfstream American, Maule, and Socata.

Note: This AD may not contain an exhaustive list of aircraft that utilize the affected engines because other aircraft may have an affected engine installed through, for example, approvals made by Supplemental Type Certificate, or FAA Form 337, "Major Repair and Alteration." It is the responsibility of each aircraft owner, operator, and person returning that aircraft to service to determine if that aircraft has an affected engine.

Compliance: Required as indicated, unless accomplished previously.

To prevent oil pump failure due to impeller failure, which could result in an engine failure, accomplish the following:

(a) For Textron Lycoming Model HIO–360–D1A, –E1AD, –E1BD, and –F1AD engines with serial numbers (S/N) of L–22579–51A or prior, except for the following: S/N L–22311–51A through L–22313–51A, L–22396–51A, L–22397–51A, L–22416–51A, L–22546–51A through L–22549–51A, L–22563–51A, L–22568–51A through L–22571–51A; for Textron Lycoming Model HIO–360–D1A, –E1AD, –E1BD, and –F1AD engines that were overhauled in the field or remanufactured prior to April 1, 1981, regardless of S/N; and for engines listed by S/N in Textron Lycoming Service Bulletin (SB) No. 455, Revision D, dated January 2, 1987; accomplish the following:

(1) Replace the sintered iron oil pump impeller and shaft with a hardened steel impeller and shaft in accordance with Avco Lycoming Textron SB No. 454, Revision B, dated January 2, 1987, or Avco Lycoming Textron SB No. 455, Revision D, dated January 2, 1987, as applicable, within 25 hours time in service (TIS) after the effective date of this AD.

(2) No action is required if engines have complied with AD 81–18–04, 81–18–04 R1, or 81–18–04 R2, and have incorporated oil pumps with a hardened steel impeller and shaft. Engines that incorporate oil pumps fitted with an aluminum impeller and shaft must comply with paragraph (c) of this AD.

(b) For engines listed by S/N in Textron Lycoming SB No. 456, Revision F, dated February 8, 1993, that incorporate a sintered iron impeller, accomplish the following:

(1) Replace any sintered iron oil pump impeller and shaft with a hardened steel impeller and shaft in accordance with Textron Lycoming SB No. 456, Revision F, dated February 8, 1993, within 100 hours TIS after the effective date of this AD, or one year after the effective date of this AD, whichever occurs first.

(2) No action is required if engines have complied with AD 81–18–04, 81–18–04 R1, or 81–18–04 R2, and have incorporated oil pumps with a hardened steel impeller and shaft. Engines that incorporate oil pumps fitted with an aluminum impeller and shaft must comply with paragraph (c) of this AD.

(c) For all other affected engines, replace any aluminum oil pump impeller and shaft with a hardened steel impeller and shaft in accordance with Avco Lycoming Textron SB No. 455, Revision D, dated January 2, 1987, or Textron Lycoming SB No. 456, Revision F, dated February 8, 1993, as applicable, as follows:

(1) For oil pumps that have accumulated 650 hours or more TIS on the effective date of this AD, replace within 100 hours TIS after the effective date of this AD.

(2) For oil pumps that accumulated less than 650 hours TIS on the effective date of this AD, replace prior to accumulating 750 hours TIS.

(3) No action is required if engines have complied with AD 81–18–04, 81–18–04 R1, or 81–18–04 R2, and have incorporated oil pumps with a hardened steel impeller and shaft.

Note: Engines originally manufactured prior to 1970 did not incorporate sintered iron impellers. For further information, refer to engine maintenance/overhaul logbook records, Lycoming build records, and the following SB's provide additional guidance: Avco Lycoming SB No. 381, Revision C, dated November 7, 1975, and Avco Lycoming SB No. 385, Revision C, dated October 3, 1975, describe a method for determining if the early design oil pump with aluminum/steel impellers are installed. Avco Lycoming SB No. 455, Revision A, dated August 18, 1981, and Avco Lycoming SB No. 455, Revision B, dated January 2, 1987, and Avco Lycoming SB No. 456, dated August 21, 1981, and Avco Lycoming SB No. 456, Revision A, dated September 25, 1981, introduced steel driving impeller, P/N 60746, and aluminum driven impeller, P/N LW13775.

(d) Sintered iron and aluminum impellers approved under FAA Parts Manufacturer Approval (PMA) are replacements for affected part numbers of Lycoming impellers and must also be replaced in accordance with paragraphs (a), (b), or (c), as applicable, of this AD.

(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, New York Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, New York Aircraft Certification Office.

Note: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the New York Aircraft Certification Office.

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

Issued in Burlington, Massachusetts, on December 21, 1993.

Jay J. Pardee,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 93–32026 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF JUSTICE

Office of the Attorney General

28 CFR Part 81

[AG Order No. 1833–93]

Designation of Agencies To Receive and Investigate Reports Required Under the Victims of Child Abuse Act

AGENCY: Department of justice.

ACTION: Proposed rule.

SUMMARY: This proposed rule is intended to carry out the Attorney General's responsibilities under the child abuse reporting provisions of the Victims of Child Abuse Act of 1990 (VCAA). The VCAA requires persons engaged in certain specified professions and activities on Federal lands or facilities to report incidents of child abuse to the appropriate Federal, State, or local agency designated by the Attorney General. In order to facilitate effective reporting, the VCAA requires the Attorney General to "designate an agency" to receive and investigate such reports to child abuse. This proposed rule sets forth the Attorney General's proposed designations and certain other matters covered by the VCAA's reporting requirements.

DATES: Comments must be received by February 2, 1994.

ADDRESSES: All comments on this proposed rule should be sent to: George C. Burgasser, Acting Chief, Child Exploitation and Obscenity Section, Criminal Division, Department of Justice, Washington, DC 20530. Comments received will be available for public inspection at Washington Center Building, 1001 G Street, NW, suite 310,

Washington, DC, between the hours of 10 a.m. and 4 p.m., Monday through Friday. No oral hearings are contemplated.

FOR FURTHER INFORMATION CONTACT: George C. Burgasser, Acting Chief, CEOS, Criminal Division, Washington, DC 20530, (202) 514–5780.

SUPPLEMENTARY INFORMATION: The child abuse reporting provisions of the Victims of Child Abuse Act (VCAA) were enacted as section 226 of the Crime Control Act of 1990, Public Law 101–647, 104 Stat. 4806, codified at 42 U.S.C. 13001–13031, 3796aa–3796aa–8, and 18 U.S.C. 403, 2258, and 3509. As set forth at 42 U.S.C. 13031, the VCAA requires persons engaged in certain professional capacities or activities on Federal lands or on federally operated facilities (as well as certain facilities covered by Federal contracts) to report incidents of child abuse occurring on such lands or facilities to an agency designated by the Attorney General to receive and investigate such reports. Set forth below for public comment is the proposed rule promulgating the Attorney General's designation of the agencies to receive and investigate these reports of child abuse. Under the provisions of 42 U.S.C. 13031(d), the Attorney General may designate non-Federal agencies to receive and investigate the child abuse reports, provided that the designations is formalized by a written agreement. Under the proposed rule, reports of child abuse made pursuant to 42 U.S.C. 13031 are to be submitted to the Federal State, or local law enforcement or child protective services agency that currently has jurisdiction to investigate reports of child abuse or protect child abuse victims in the Federal land area or facility in question. Where no agency currently qualifies for designation under the rule, the rule designates the Federal Bureau of Investigation to receive and investigate the reports of child abuse until another agency qualifies for such designation.

In accordance with 5 U.S.C. 605(b), the Attorney General certifies that this rule will not have a significant adverse economic impact on a substantial number of small entities. This rule has not been reviewed by the Office of Management and Budget pursuant to Executive Order 12286. This rule does not have federalism implications warranting the preparation of a Federalism Assessment in accordance with Executive Order 12612. This rule meets the applicable standards provided in sections 2(a) and 2(b) of Executive Order 12778.

List of Subjects in 28 CFR Part 81

Child abuse, Federal buildings and facilities.

By virtue of the authority vested in me as Attorney General, including 28 U.S.C. 509 and 510, 5 U.S.C. 301, 42 U.S.C. 13031, and Public Law 101–647 (104 Stat. 4806), part 81 of Chapter I of Title 28 of the Code of Federal Regulations is proposed to be added as follows:

PART 81—CHILD ABUSE REPORTING DESIGNATIONS AND PROCEDURES

Sec.
81.1 Purpose.
81.2 Submission of reports; designation of agencies to receive reports of child abuse.
81.3 Designation of FBI in absence of other agreement.
81.4 Referral of reports.
81.5 Definitions.

Authority: 28 U.S.C. 509, 510; 42 U.S.C. 13031.

§ 81.1 Purpose.

The regulations in this part designate the agencies that are authorized to receive and investigate reports of child abuse under the provisions of 42 U.S.C. 13031.

§ 81.2 Submission of reports; designation of agencies to receive reports of child abuse.

Reports of child abuse required by 42 U.S.C. 13031 shall be made to the local law enforcement agency or local child protective services agency that has jurisdiction to investigate reports of child abuse or to protect child abuse victims in the land area or facility in question. Such agencies are hereby respectively designated as the agencies to receive and investigate such reports, pursuant to 42 U.S.C. 13031(d), with respect to Federal lands and federally operated or contracted facilities within their respective jurisdictions, provided that such agencies, if non-Federal, enter into formal written agreements to do so with the Attorney General, her delegate, or a Federal agency with jurisdiction for the area or facility in question.

§ 81.3 Designation of FBI.

For Federal lands, federally operated facilities, or federally contracted facilities where no agency qualifies for designation under § 81.2 of this part, the Federal Bureau of Investigation is hereby designated as the agency to receive and investigate reports of child abuse made pursuant to 42 U.S.C. 13031 until such time as another agency qualifies as a designated agency under § 81.2.

§ 81.4 Referral of reports.

Where a report of child abuse received by a designated agency that is not a law enforcement agency involves allegations of sexual abuse, serious physical injury, or life-threatening neglect of a child, that agency shall immediately report such occurrence to a law enforcement agency with authority to take emergency action to protect the child.

§ 81.5 Definitions.

Local child protective services agency means that agency of the Federal Government, of a State, or of a local government that has the primary responsibility for child protection within a particular portion of the Federal lands, a particular federally operated facility, or a particular federally contracted facility in which children are cared for or reside.

Local law enforcement agency means that Federal, State, or local law enforcement agency that has the primary responsibility for the investigation of an instance of alleged child abuse occurring within a particular portion of the Federal lands, a particular federally operated facility, or a particular federally contracted facility in which children are cared for or reside.

Dated: December 23, 1993.

Janet Reno,

Attorney General.

[FR Doc. 93–32086 Filed 12–30–93; 8:45 am]

BILLING CODE 4410–01–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 721

[OPPTS–50610A; FRL–4752–1]

Certain Acrylate Esters; Extension of Comment Period for a Proposed Significant New Use Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Extension of comment period.

SUMMARY: EPA is extending the comment period for a proposed significant new use rule (SNUR) for certain acrylate esters. As initially published in the **Federal Register** of November 22, 1993 (58 FR 61649), the comments were to be received on or before December 22, 1993. Two commenters who intend to submit comments concerning this proposed rule have requested additional time to prepare their responses. EPA is therefore extending the comment period

30 days in order to give all interested persons the opportunity to comment fully.

DATES: Written comments must be submitted to EPA by January 21, 1994.

ADDRESSES: All comments should be sent in triplicate to: U.S. Environmental Protection Agency, ATTN: OPPT Document Receipt Officer (7407), 401 M St., SW., Rm. E–G99, Washington, DC 20460. All comments which are claimed confidential must be clearly marked as such. Three additional sanitized copies of any comments containing confidential business information (CBI) must also be submitted. Nonconfidential versions of comments on the rule will be placed in the rulemaking record and will be available for public inspection.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, Environmental Protection Agency, Rm. E–543A, 401 M St., SW., Washington, DC 20460, Telephone: (202) 554–1404, TDD: (202) 554–0551.

SUPPLEMENTARY INFORMATION: This extension of the comment period will allow interested parties who may comment on the proposed rule additional time to prepare their responses.

List of Subjects in 40 CFR Part 721

Environmental protection, Chemicals, Hazardous materials, Recordkeeping and reporting requirements, Significant new uses.

Dated: December 23, 1993.

Denise M. Keehner,

Acting Director, Office of Pollution Prevention and Toxics.

[FR Doc. 93–32058 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–F

GENERAL SERVICES ADMINISTRATION

41 CFR Parts 201–1, 201–3, 201–20, and 201–39

RIN 3090–AF04

Amendment of FIRMR Provisions Relating to FIRMR Applicability, FIRMR Bulletins, Present Value Analysis, and Recycled Federal Information Processing (FIP) Resources

AGENCY: Information Resources Management Service, GSA.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to amend the Federal Information Resources Management Regulation (FIRMR) to: Revise FIRMR applicability provisions relating to the replacement of embedded Federal information processing (FIP) equipment, the delivery of a small amount of FIP resources under non-FIP procurements, and the availability of guidance on interpreting FIRMR applicability provisions; explain the nonmandatory nature of FIRMR bulletins; and require the use of OMB Circular A–94 in performing present value analysis when evaluating bids and proposals.

DATES: Comment are due March 4, 1994.

ADDRESSES: Comments may be mailed to GSA/KMR, 18th and F Streets, NW., room 3224, Washington, DC 20405, Attn: Anne Horth, or delivered to that address between 8 a.m. and 4:30 p.m.

FOR FURTHER INFORMATION CONTACT: Anne Horth, GSA, Office of Information Resources Management Policy, Regulations Analysis Division (KMR), 18th and F Streets, NW., room 3224, Washington, DC 20405, telephone FTS/Commercial (202) 501–0960 (v) or (202) 501–0657 (tdd).

SUPPLEMENTARY INFORMATION: (1) Part 201–1 and subpart 201–39.1 are being amended to revise FIRMR provisions regarding applicability. Currently, FIRMR applicability extends to the acquisition of FIP equipment embedded in other products. Agencies have questioned whether such acquisitions should be applicable, given that the FIRMR was not applicable to the initial acquisition and the FIP equipment will only be put back in the original excepted produce. Accordingly, the FIRMR is being revised to grant an exception to FIRMR applicability for the replacement of any FIP equipment in a product that has already been granted an exception under § 201–1.002–2(e). FIP software or related supplies used in the embedded FIP equipment is also being exempted for FIRMR coverage.

Another issue creating confusion relates to the delivery of FIP resources. Now, the FIRMR applies whenever FIP resources are delivered to a Federal agency or users designated by the agency. Problems have arisen when the solicitation or contract is primarily for other than FIP resources, but FIP resources are also being delivered. The FIRMR currently always applies to the acquisition of the FIP resources, no matter how small the amount of FIP resources being delivered. Given the legislative exceptions for FIP resources that are not "significant" or are "incidental to the performance of a Federal contract," GSA believes that a FIRMR exception would also be appropriate for acquisitions of FIP resources with a relatively low dollar value when the solicitation or contract is predominantly for non-FIP resources. Accordingly, the FIRMR is being revised to except such acquisitions when the value of the FIP resources does not exceed $500,000.

A new § 201–1.002–3 is being added to show that guidance on understanding FIRMR applicability provisions is available in FIRMR Bulletin A–1. Some agencies have asked for additional information on how to interpret FIRMR applicability provisions because they have been unaware of the existence of the guidance already available in Bulletin A–1. The addition of this section will correct that deficiency.

(2) Subpart 201–3.001 is being amended to explain the nonmandatory nature of FIRMR bulletins. There is a perception, among some users of the FIRMR, that FIRMR bulletins are regulatory in nature. FIRMR bulletins are not regulatory. They are issued to: provide information and guidance that helps agencies acquire or manage FIP resources; explain procedures for using GSA programs; and assist in interpreting the provisions of the Brooks Act.

(3) Sections 201–20.203–2, 201–39.14–1 and 201–39.1501–1 are being amended to reflect the fact that OMB Circular No. A–94 will now be used not only as the basis of analyzing the cost of each alternative when doing analyses of alternatives, but also in calculating bid and proposal prices/costs. Heretofore, OMB Circular No. A–94 has only been used to perform analyses of alternatives and the guidance in OMB Circular No. A–104 has been used in the evaluation of bids and proposals. OMB A–104 has been rescinded, and OMB A–94 has been revised to provide for making both types of determinations.

(4) GSA has determined that this rule is not a significant rule for the purposes of Executive Order 12866 of October 4, 1993, because it is not likely to result in any of the impacts noted in Executive Order 12866, affect the rights of specified individuals, or raise issues arising from the policies of the Administration. GSA has based all administrative decisions underlying this rule on adequate information concerning the need for and consequences of this rule; has determined that the potential benefits to society from this rule outweigh the potential costs; has maximized the net benefits; and has chosen the alternative approach involving the least net cost to society.

List of Subjects in 41 CFR Parts 201–1, 201–3, 201–20, and 201–39.

Archives and records, Computer technology, Telecommunications, Government procurement, Property

management, Records management, and Federal information processing resources activities.

Accordingly, 41 CFR parts 201–1, 201–3, 201–20 and 201–39 are proposed to be amended as follows:

PART 201–1—APPLICABILITY AND AUTHORITY

1. The authority citation for part 201–1 continues to read as follows:

Authority: 40 U.S.C. 486(c) and 751(f)

2. Section 201–1.002–2 is amended by revising § 201–1.002–2(c) and adding new § 201–1.002–2(f) as follows:

§ 201–1.002–2 Exceptions.

* * * * *

(c) When both FIP and other resources are being acquired under the same solicitation or contract and the FIRMR applies to the solicitation or contract, the FIRMR applies only to the FIP resources. However, the FIRMR does not apply to solicitations and contracts predominantly for non-FIP resources when the dollar value of the FIP resources does not exceed $500,000.

* * * * *

(f) The FIRMR does not apply to the acquisition, management, and use of FIP resources that will be used in or as embedded FIP equipment in products excepted from FIRMR coverage under § 201–1.002–2(e), including replacement FIP resources.

3. A new § 201–1.002–3 is added as follows:

§ 201–1.002–3 Procedures.

FIRMR Bulletin A–1 provides an analytical framework and examples for use in determining whether the FIRMR applies to an acquisition. Agencies should use this bulletin to assist them in understanding FIRMR applicability provisions.

PART 201–3—THE FIRMR SYSTEM

4. The authority citation for part 201–3 continues to read as follows:

Authority: 40 U.S.C. 486(c) and 751(f).

5. Section 201–3.001 is amended by revising § 201–3.001(b)(1) to read:

§ 201–3.001 General.

* * * * *

(b) * * *

(1) FIRMR bulletins contain guidance and information on various information resources management subjects. FIRMR bulletins do not constitute binding authority, but should be used as an aid in understanding GSA programs and the FIRMR. FIRMR bulletins are published in appendix B of the looseleaf edition of the FIRMR and are available along with the FIRMR from GPO by subscription or on GSA's CD–ROM.

* * * * *

PART 201–20—ACQUISITION

6. The authority citation for part 201–20 continues to read as follows:

Authority: 40 U.S.C. 486(c) and 751(f).

7. Section 201–20.203–2 is amended by revising § 201–20.203–2(c) as follows:

§ 201–20.203–2 Cost for each alternative.

* * * * *

(c) Agencies shall follow guidance in OMB Circular No. A–94, Revised Transmittal Memorandum No. 64, "Benefit-Cost Analysis of Federal Programs; Guidelines and Discounts," when calculating the cost of each alternative.

PART 201–39—ACQUISITION OF FEDERAL INFORMATION PROCESSING RESOURCES (FIP) BY CONTRACTING

8. The authority citation for part 201–39 continues to read as follows:

Authority: 40 U.S.C. 486(c) and 751(f).

9. Section 201–39.101–3 is amended by revising § 201–39.101–3(b)(3) and adding a new § 201–39.101–3(b)(6) as follows:

§ 201–39.101–3 Applicability.

* * * * *

(b) *Exceptions.*

* * * * *

(3) When both FIP and other resources are being acquired under the same solicitation or contract and the FIRMR applies to the solicitation or contract, the FIRMR applies only to the FIP resources. However, the FIRMR does not apply to solicitations and contracts predominantly for non-FIP resources when the dollar value of the FIP resources does not exceed $500,000.

(6) The FIRMR does not apply to the acquisition, management, and use of FIP resources that will be used in or as embedded FIP equipment in products excepted from FIRMR coverage under § 201–1.002–2(e), including replacement FIP equipment.

* * * * *

10. Section 201–39.1402–1 is amended by revising paragraph (b) to read as follows:

§ 201–39.1402–1 Policies.

* * * * *

(b) When payments are expected to vary among the alternatives being considered, or where payments will be made over an extended period, agencies shall consider the need to adjust all prices and costs to present value and apply the results in source selection. Agencies should follow the guidance in OMB Circular A–94 regarding present value calculations.

11. Section 201–39.1501–1 is amended by revising § 201–39.1501–1(b) to read as follows:

§ 201–39.1501–1 Policies.

(b) When payments are expected to vary among the alternatives being considered, or where payments will be made over an extended period, agencies shall consider the need to adjust all prices and costs to present value and apply the results in source selection. Agencies should follow the guidance in OMB Circular A–94 regarding present value calculations.

Dated: December 10, 1993.

Francis A. McDonough,

Assistant Commissioner for Federal Information Resources Management.

[FR Doc. 93–31152 Filed 12–30–93; 8:45 am]

BILLING CODE 6820–25–M

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

43 CFR Part 403

RIN 1006–AA30

Revenues Management

AGENCY: Bureau of Reclamation, Interior.

ACTION: Advance notice of proposed rulemaking.

SUMMARY: The Bureau of Reclamation (Reclamation) is proposing to publish rules and guidelines detailing the authorized crediting of revenues derived from the incidental use of Reclamation water projects and project lands under the jurisdiction of Reclamation. Due to existing confusion in revenues crediting criteria, rules will be utilized to clearly define front-end, tail-end, and general credit and when each is appropriate. Rules are necessary to define statutory language which may seem ambiguous and which may have caused confusion in the past. The rules will also govern the treatment of the contractors who have received unauthorized credits in the past.

DATES: Reclamation invites the public to submit written comments on the proposed rulemaking action. Comments must be submitted on or before February 2, 1994.

ADDRESSES: Written comments on the proposed rules and guidelines should be

addressed to J. William McDonald, Assistant Commissioner-Resources Management, Bureau of Reclamation, Denver Office, P.O. Box 25007, Denver, CO 80225–0007.

FOR FURTHER INFORMATION CONTACT: Ms. Jaralyn Beek, Head, Revenues, Section, Bureau of Reclamation, D–5612, P.O. Box 25007, Denver, CO 80225–000 of telephone (303) 236–1061, extension 227.

SUPPLEMENTARY INFORMATION: The passage of the 1902 Reclamation Act, as amended and supplemented provided for the creation of a fund within the United States Treasury (Reclamation fund) to be used to finance water projects in the arid West. Subsequently, water projects were constructed under a variety of statutory authorities with the beneficiaries generally repaying those costs determined to be reimbursable through scheduled payments.

Revenues are generated from the incidental use of Reclamation water projects and the lands under the jurisdiction of Reclamation. These uses are authorized by Reclamation law and the disposition of the revenues generated by the uses are mandated by law. These uses include, but are not limited to, grazing, the leasing of minerals such as oil and gas, commercial uses, cabin sites, storage of non-project water, sale of surplus water, etc. Generally, these revenues are credited in one of three ways. These are:

(1) Revenues which may be distributed as a general credit to the Reclamation fund;

(2) Revenues which may be distributed as a "tail-end" credit to the construction costs; and

(3) Revenues which may be distributed as a "front-end" or direct credit to the annual obligations of the water users.

The revenues which are distributed as a general credit to the Reclamation fund are not meant to be spent on specific functions or projects, but rather are accessible only as directed by the laws which govern the Reclamation fund.

The second type of disbursement, a tail-end credit (also termed a credit to the project), involves application of the funds against the last payment due in the repayment schedule. The reimbursable portion of a water project's construction cost is amortized and repaid by the beneficiaries (districts). With this type of revenues crediting the net result is accelerated repayment of the project's construction cost, without relieving the project users of their requirement to pay some or all of their annual obligation.

The third type of revenue crediting is termed a front-end or direct credit. This method allows the "direct" crediting of specific revenues on the annual construction repayment and operation and maintenance obligations of the water districts. Under the general legislative authority which provided for front-end crediting the water user could receive benefit from the direct crediting of revenues only from specified sources:

(1) Power plants;

(2) Leasing of project grazing and farm lands; and

(3) The sale or use of town sites.

The primary difference between the tail-end credit and a front-end credit is that the front-end or direct credit is used to satisfy a water user's current construction payment. Any revenues in excess of the annual construction payment are to be applied first against the annual operation and maintenance expenses of the district and then as the water users direct. This crediting assists the water user or district in meeting current obligations rather than accelerating the repayment of the construction obligation and applies to only a limited number of contracts written between 1924 and 1938.

Exceptions to the general revenue disposition requirements are revenue crediting criteria directed by project specific legislation.

The specific method used to disburse the revenues is dependent upon the particular statute which authorizes the activity and mandates the crediting of revenues, the activity generating the revenue, and the status of the lands involved (whether the lands are withdrawn public domain lands or lands purchased/acquired for the project).

Inasmuch as Reclamation does not have the latitude to dispose of revenues differently than is required by law, Reclamation has recently completed the first stage of a review of general and project-specific legislation, repayment contracts and amendments, and current Reclamation practices as they pertain to collection and crediting of revenues. The intent of the initial review was to ensure that revenues crediting fully complies with statutory requirements and focused primarily on those revenues from which the water users receive direct benefit. Reclamation has determined that there have been instances where revenues may have been credited (direct credits) to the benefit of the water users (districts) rather than to reduce the total construction repayment obligation. This improper crediting is a result of incomplete or inaccurate guidelines within Reclamation and, in some instances, inappropriate contract provisions.

Reclamation intends to propose rules that would clearly set forth when direct or front-end credits, tail-end credits, and credits to the Reclamation fund are authorized, and will define ambiguous statutory terms that have caused confusion in the past. In addition, the rules would propose to establish an appeal process for districts who are notified of improper past crediting. Reclamation also will propose to require districts to pay interest on unpaid balances once notified of underpayment.

Dated: December 23, 1993.

Donald R. Glaser,

Deputy Commissioner.

[FR Doc. 93–32028 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–14–M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MM Docket No. 93–310, RM–8395]

Radio Broadcasting Services; Chester, Virginia

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: The Commission requests comments on a petition filed by Hoffman Communications, Inc., licensee of Station WDYL–FM, Channel 226A, Chester, Virginia, proposing the substitution of Channel 289A for Channel 226A at Chester and modification of its license to specify operation on the alternate Class A channel. Channel 289A can be allotted to Chester in compliance with the Commission's minimum distance separation requirements with a site restriction of 4.2 kilometers (2.6 miles) northwest. The coordinates for Channel 289A at Chester are 37–23–11 and 77–28–26. We will not accept competing expressions of interest in the use of Channel 289A at Chester because the procedures outlined in Modification of FM and TV Licenses, 98 FCC 2nd 916 (1984), and § 1.420(g) of the Commission's Rules, do not apply in this case since no upgrade in facilities is contemplated.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before March 4, 1994.

ADDRESSES: Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner, or its counsel or consultant, as follows: David M Silverman, Esq.,

Cole, Raywid & Braverman, 1919 Pennsylvania Avenue, NW., Suite 200, Washington, DC 20006 (Counsel for petitioner).

FOR FURTHER INFORMATION CONTACT: Pamela Blumenthal, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–310, adopted December 8, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC's Reference Center (room 239), 1919 M Street, NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, ITS, Inc., (202) 857–3800, 2100 M Street, NW., Suite 140, Washington, DC 20037.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all *ex parte* contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible *ex parte* contacts.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32036 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

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47 CFR Part 73

[MM Docket No. 93–309, RM–8393]

Radio Broadcasting Services; Buhl, Minnesota

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: This document requests comments on a petition filed by Minnesota Public Radio proposing the allotment of Channel 223C2 to Buhl, Minnesota, and reservation of the channel for noncommercial educational use. Canadian concurrence has been requested for the allotment of Channel *223C2 at Buhl without a site restriction at coordinates 47–29–37 and 92–46–40.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before March 4, 1994.

ADDRESSES: Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner's counsel, as follows: Richard J. Bodorff, Todd M. Stansbury, Wiley, Rein & Fielding, 1776 K Street, NW., Washington, DC 20006.

FOR FURTHER INFORMATION CONTACT: Kathleen Scheuerle, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–309, adopted December 8, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the Commission's Reference Center (room 239), 1919 M Street, NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Services, Inc., 2100 M Street, NW., Suite 140, Washington, DC 20037, (202) 857–3800.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contact.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John A. Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32037 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

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47 CFR Part 73

[MM Docket No. 93–308, RM–8383]

Radio Broadcasting Services; Butte, Montana

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: This document requests comments on a petition filed by The Montana College of Mineral Sciences and Technology, proposing the substitution of Channel 295A for Channel *218A at Butte, Montana, reservation of the Channel for noncommercial educational use and modification of the license for Station KMSM–FM, to specify operation on Channel *295A. The coordinates for Channel *295A are 46–00–43 and 112–33–23. We shall propose to modify the license for Station KMSM–FM in accordance with the Commission's Rules and will not accept competing expressions of interest for the use of the channel or require petitioner to demonstrate the availability of an additional equivalent class channel for use by such parties.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before March 4, 1994.

ADDRESSES: Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner's counsel, as follows: Neal J. Friedman, Pepper & Corazzini, 200 Montgomery Building, 1776 K Street, NW., Washington, DC 20006.

FOR FURTHER INFORMATION CONTACT: Kathleen Scheuerle, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–308, adopted December 8, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the Commission's Reference Center (room 239), 1919 M Street, NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Services, Inc., 2100 M Street, NW., suite 140, Washington, DC 20037, (202) 857–3800.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contact.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73:

Radio broadcasting.

Federal Communications Commission.

John A. Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32038 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

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47 CFR Part 73

[MM Docket No. 93–313, RM–8390]

Radio Broadcasting Services; Bay Minette and Daphne, AL

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: This document requests comments on a petition for rule making filed on behalf of Baldwin Broadcasting Company, licensee of Station WFMI(FM), Channel 293C3, Bay Minette, Alabama, seeking the reallotment of Channel 293C3 to Daphne, Alabama, and modification of its license accordingly. Petitioner proposes no reception change in the present technical facilities of Station WFMI(FM) to accommodate its proposal, and is therefore requested to provide additional information to demonstrate the public interest benefits that would result from the proposed change in community of license. Coordinates for this proposal are 30–40–45 and 87–50–24.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before March 4, 1994.

ADDRESSES: Secretary, Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner's counsel, as follows: Barry D. Wood, Esq., Jones, Waldo, Holbrook & McDonough, P.C, Suite 900, 2300 M Street, NW., Washington, DC 20037.

FOR FURTHER INFORMATON CONTACT: Nancy Joyner, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–313, adopted December 7, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC's Reference Center (room 239), 1919 M Street, NW., 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, 2100 M Street, NW. Suite 140, Washington, DC 20037.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contacts.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John A. Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32039 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

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47 CFR Part 73

[MM Docket No. 93–312, RM–8394]

Radio Broadcasting Services; Gallup, New Mexico

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: The Commission requests comments on a petition filed by Lewis J. Wallach seeking the allotment of Channel 268A to Gallup, New Mexico, as the community's fifth local commercial FM broadcast service. Channel 268A can be allotted to Gallup in compliance with the Commission's minimum distance separation requirements without the imposition of a site restriction, at coordinates North Latitude 35–31–30 and West Longitude 108–44–30.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before December 28, 1994.

ADDRESSES: Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner, or its counsel or consultant, as follows: Lewis J. Wallach, 4310 Pan American, suite 208, Albuquerque, New Mexico 87107 (Petitioner).

FOR FURTHER INFORMATION CONTACT: Leslie K. Shapiro, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–312, adopted December 7, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (room 239), 1919 M Street, NW., 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, 2100 M Street, NW., suite 140, Washington, DC 20037.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contacts.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John A. Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32040 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

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47 CFR Part 73

[MM Docket No. 93–311, RM–8382]

Radio Broadcasting Services; Bagdad, AZ

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: This document requests comments on a petition for rule making filed by Chris Sarros requesting the allotment of FM Channel 276C3 to Bagdad, Arizona, as that community's second local FM service. Coordinates for Channel 276C3 are 34–28–50 and 113–20–08. Bagdad is located within 320 kilometers (199 miles) of the United States-Mexico border, and therefore, the Commission must obtain concurrence of the Mexican government to this proposal.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before March 4, 1994.

ADDRESSES: Secretary, Federal Communications Commission,

Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner, as follows: Chris Sarros, 3815 Northfield Avenue, Kingman, Arizona 86401.

FOR FURTHER INFORMATION CONTACT: Nancy Joyner, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–311, adopted December 7, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC's Reference Center (room 239), 1919 M Street, NW., 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, 2100 M Street, NW., Suite 140, Washington, DC 20037.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contacts.

For information regarding proper filing procedures for comments, See 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John A. Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32041 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

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47 CFR Part 73

[MM Docket No. 93–314, RM–8396]

Radio Broadcasting Services; Cadiz and Oak Grove, Kentucky

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: This document requests comments on a petition by Ham Broadcasting, Inc., licensee of Station WKDZ(FM), Channel 292A, Cadiz, Kentucky, seeking the substitution of Channel 293C3 for Channel 292A at Cadiz, Kentucky, and the reallotment of Channel 293C3 from Cadiz, Kentucky to Oak Grove, Kentucky, and the modification of the license for Station WKDZ(FM) to specify Oak Grove as its community of license, in accordance with § 1.420(i) of the Commission's rules. The coordinates for Channel 293C3 at Oak Grove are North Latitude 36–45–05 and West Longitude 87–27–02.

DATES: Comments must be filed on or before February 18, 1994, and reply comments on or before March 4, 1994.

ADDRESSES: Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner, or its counsel or consultant, as follows: Peter Tannenwald, Arent, Fox, Kintner, Plotkin & Kahn, 1050 Connecticut Avenue, NW., Washington, DC 20036–5339 (Counsel for petitioner).

FOR FURTHER INFORMATION CONTACT: Nancy J. Walls, Mass Media Bureau, (202) 634–6530.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Notice of Proposed Rule Making, MM Docket No. 93–314, adopted December 3, 1993, and released December 28, 1993. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (room 239), 1919 M Street, NW., 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, 1919 M Street, NW., room 246, or 2100 M Street, NW., suite 140, Washington, DC 20037.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contacts.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John Karousos,

Acting Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 93–32042 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AC17

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Three Puerto Rican Plants

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine *Mitracarpus maxwelliae, Mitracarpus polycladus,* and *Eugenia woodburyana* to be endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended. *M. maxwelliae* and *E. woodburyana* are endemic to Puerto Rico. *M. polycladus* has been reported from only one other island, Saba, in the Lesser Antilles. Both species of *Mitracarpus* are small shrubs that are each limited in distribution to one area in Guánica, located in southwestern Puerto Rico. *E. woodburyana* is known only from approximately 45 individuals at three locations in southwestern Puerto Rico. These species are variously threatened by road construction, recreational activities, wildfires, and land clearing associated with development for agriculture and other purposes. This proposal, if made final, would provide *M. maxwelliae, M. polycladus* and *E. woodburyana* with the Federal protection and recovery provisions afforded by the Act for listed species.

DATES: Comments from all interested parties must be received by March 4, 1994. Public hearing requests must be received by February 17, 1994.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boquerón, Puerto Rico 00622. Comments and materials received will be available for public inspection, by appointment, during normal business hours at this office, and at the Service's Southeast Regional Office, suite 1282, 75 Spring Street, SW., Atlanta, Georgia 30303.

FOR FURTHER INFORMATION CONTACT: Ms. Susan Silander at the Caribbean Field Office address (809/851–7297) or Mr. Dave Flemming at the Atlanta Regional Office address (404/331–3580).

SUPPLEMENTARY INFORMATION:

Background

Mitracarpus maxwelliae was discovered on March 8, 1925, by

Nathaniel L. Britton on a limestone hill in the municipality of Guánica, Puerto Rico. The site was later rediscovered by Alain Liogier in 1982 and again by George R. Proctor and Miguel Canals in 1987. The species has never been found at any other location but the type locality. At this locality, it is found along an unpaved road, growing on dry exposed gravel. Approximately 1,443 plants, including mature flowering individuals and seedlings, were counted within an area of about 7,500 square meters (Proctor 1991a).

Mitracarpus maxwelliae is a low, densely-branching, moundlike shrub that may reach approximately 20 centimeters in height. The somewhat woody branches are striate and sharply 4-angled. The leaves are opposite, sessile, linear or linear-lanceolate, densely scabrous, and from 1 to 3 centimeters long and 2 to 5 millimeters wide. The flower heads are terminal, dense, sub-globose, and from .8 to 1.3 centimeters in diameter. The corolla is white, narrowly funnelform, minutely glandular-papillose, 5 to 6 millimeters long. The capsule is about 1.5 millimeter in diameter, opening by a transverse circular split at about the middle. The seeds are ellipsoid, brownish-black, and 1.2 millimeters long and .8 millimeter wide.

Mitracarpus polycladus was first discovered growing on coastal rocks near Caña Gorda, Guánica, Puerto Rico, in 1886 by Paul Sintenis. It was also located on the island of Saba in the lesser Antilles by the Dutch botanist Boldingh. Today it is still known only from these two locations, where it grows in crevices and soil pockets of coastal rocks in arid areas. Exact numbers of individuals have been difficult to estimate due to extreme drought conditions in recent years (Proctor 1991b).

Mitracarpus polycladus is a suffrutescent perennial. It is branched near the base, and the erect or spreading stems may reach up to 45 centimeters in height. The branches are 4-angled and glabrous. Leaves are opposite, linear to linear-lanceolate, 2 to 4.5 centimeters long, .3 to .5 centimeters wide, glabrous and often with an inrolled margin and decurrent base. The inflorescence is terminal and capitate, 8 to 13 millimeters in diameter, many flowered and subtended by 3 bract-like leaves. The corolla is white, about 5 millimeters long, with ovate leaves. The seed capsule is 1.5 millimeter in diameter, splitting open transversely below the middle, and contains black seeds.

Eugenia woodburyana, a small evergreen tree, is endemic to Puerto Rico and currently known from only the Sierra Bermeja in the municipalities of Cabo Rojo and Lajas and from the Guánica Commonwealth Forest in Guánica, all in southwestern Puerto Rico. An additional individual has been reported from the Cabo Rojo National Wildlife Refuge, in Cabo Rojo, adjacent to the Sierra Bermeja. Approximately 45 individuals are known from these three locations. The species was only recently discovered and described by Alain Liogier (Liogier 1980).

Eugenia woodburyana may reach 6 meters in height. The leaves are opposite, obovate, pilose on both sides, glandular-punctate below, and from 1.5 to 2 centimeters long and 1 to 1.5 centimeters wide. The inflorescence is axillary, 2 to 5 flowered and with a peduncle 1 to 3 millimeters long. The calyx is 4-lobed and the petals are white, 4 millimeters long and 3.5 millimeters wide. The striking fruit is red upon maturity, 8-winged and 2 centimeters in diameter.

Mitracarpus maxwelliae and *M. polycladus* were recommended for Federal listing in a report prepared by the Smithsonian Institution as directed by section 12 of the Endangered Species Act of 1973. The report was presented to Congress in 1975 as House Document No. 94–51. The species were subsequently included among the plants being considered as endangered or threatened by the Service, as published in the **Federal Register** notice of review dated December 15, 1980 (45 FR 82480); the November 28, 1983 update (48 FR 53680), the revised notice of September 27, 1985 (50 FR 39526), and the February 21, 1990 (55 FR 6184) notice of review. In the February 21, 1990, notice, *M. maxwelliae* was designated as a category 1 species (a species for which the Service has substantial information supporting the appropriateness of proposing to list them as endangered or threatened) and *M. polycladus* as a category 2 species (a taxon for which there is evidence of vulnerability, but for which there was not enough data to support listing). *Eugenia woodburyana* was included as a category 2 candidate for listing in the September 30,1993, plant notice of review. It has been included in the Center for Plant Conservation's Report on Rare Plants in Puerto Rico (Center for Plant Conservation 1992) as a taxon that may become extinct within the next 10 years. All three species are considered to be critical plants by the Natural Heritage Program of the Puerto Rico Department of Natural Resources (Department of Natural Resources 1993).

Based on status survey reports completed in 1991, and in conjunction with other recent field work, the Service recently reclassified *Mitracarpus polycladus* and *Eugenia woodburyana* as category 1 candidates.

Section 4(b)(3)(B) of the Act, as amended in 1982, requires the Secretary to make findings on certain pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 Amendments further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This was the case for *Mitracarpus maxwelliae* and *M. polycladus*, because the Service had accepted the 1975 Smithsonian report as a petition. In each October from 1983 through 1992, the Service has found that the petitioned listing of these species was warranted but precluded by other listing actions of a higher priority, and that additional data on vulnerability and threats were still being gathered. This proposed rule constitutes the final 1-year finding for these two species in accordance with section 4(b)(3)(B)(ii) of the Act.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Mitracarpus maxwelliae* Britton & Wilson, *M. polycladus* Urban and *Eugenia woodburyana* Alain are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

In the Sierra Bermeja, *Eugenia woodburyana* is found on privately owned land subject to intense pressure for agricultural, rural and tourist development. The land is currently being cleared for grazing by cattle and goats. Adjacent land is being subdivided for sale in small farms, some destined for tourist and urban development. All three species are also found within the Guánica Commonwealth Forest; however, *Mitracarpus maxwelliae* and *M. polycladus* are found along infrequently used roadways where they may be adversely impacted in the future. Any road improvement, widening, or increase in traffic along these roads would result in the loss of a significant portion of the only known populations. The sites of these two species are near preferred recreational

areas, heavily utilized during the summer months.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Taking for these purposes has not been a documented factor in the decline of these species.

C. Disease or Predation

Disease and predation have not been documented as factors in the decline of these species.

D. The Inadequacy of Existing Regulatory Mechanisms

The Commonwealth of Puerto Rico has adopted a regulation that recognizes and provides protection for certain Commonwealth listed species. However, *Mitracarpus maxwelliae, Mitracarpus polycladus* and *Eugenia woodburyana* are not yet on the Commonwealth list. Federal listing would provide immediate protection and, if the species are ultimately placed on the Commonwealth list, enhance their protection and possibilities for funding needed research.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

One of the most important factors affecting the continued survival of these species is their limited distribution. Because so few individuals are known to occur in a limited area, the risk of extinction is extremely high. Wildfires are a frequent occurrence in this extremely dry portion of southwestern Puerto Rico, particularly in the coastal roadside areas of Guánica where *Mitracarpus maxwelliae* and *Mitracarpus polycladus* are found.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Mitracarpus maxwelliae, M. polycladus* and *Eugenia woodburyana* as endangered. *M. maxwelliae* and *M. polycladus* are known from only one location in the Guánica area of southwestern Puerto Rico. In this area they are threatened by road construction, recreational activities and wildfires. *E. woodburyana* is known from only approximately 45 individuals at three locations in southwestern Puerto Rico. Deforestation for rural, agricultural, and tourist development are imminent threats to the survival of the species. Therefore, endangered rather than threatened status seems an accurate assessment of the species' condition. The reasons for not proposing critical habitat for these species are discussed below in the "Critical Habitat" section.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. Title 50, part 424 of the Code of Federal Regulations, § 424.12(1) states that designation of critical habitat is not prudent when one or both of the following situations exist: (i) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species, or (ii) Such designation of critical habitat would not be beneficial to the species. Both situations apply to *Mitracarpus maxwelliae, Mitracarpus polycladus* and *Eugenia woodburyana*.

Critical habitat would not be beneficial in terms of adding additional protection for the species under section 7 of the Act. Regulations promulgated for the implementation of section 7 provide for both a "jeopardy" standard and a "destruction or adverse modification" of critical habitat standard. Because of the highly limited distribution of these species and their precarious status, any Federal action that would destroy or have any significant adverse affect on their habitat would likely result in a jeopardy biological opinion under section 7. Under these conditions, no additional benefits would accrue from designation of critical habitat that would not be available through listing alone.

The Service also finds that designation of critical habitat is not prudent for these species due to the potential for taking. The number of individuals of *Mitracarpus maxwelliae, Mitracarpus polycladus* and *Eugenia woodburyana* is sufficiently small that vandalism and collection could seriously affect the survival of the species. Publication of critical habitat descriptions and maps in the **Federal Register** would increase the likelihood of such activities. These species are not protected by Commonwealth law and, since they do not occur on Federal lands, would receive no protection from taking under the Endangered Species Act. The Service believes that Federal involvement in the areas where these plants occur can be identified without the designation of critical habitat. All involved parties and landowners have been notified of the location and importance of protecting these species' habitat. Protection of these species' habitat will also be addressed through the recovery process and through the section 7 jeopardy standard.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, Commonwealth, and private agencies, groups and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the Commonwealth, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

The only currently known Federal involvement is through the occurrence of *Eugenia woodburyana* on the Cabo Rojo National Wildlife Refuge. Other Federal involvement may occur in the future through the funding of housing (Farmer's Home Administration or Housing and Urban Development) or funding utilized for the management of the Guánica Commonwealth Forest (U.S. Department of Agriculture, Forest Service).

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of

general prohibitions and exceptions that apply to all endangered plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export any endangered plant, transport it in interstate or foreign commerce in the course of commercial activity, sell or offer it for sale in interstate or foreign commerce, or remove it from areas under Federal jurisdiction and reduce it to possession. In addition, for endangered plants, the 1988 amendments (Pub. L. 100–478) to the Act prohibit the malicious damage or destruction on Federal lands and the removal, cutting, digging up, or damaging or destroying of endangered plants in knowing violation of any Commonwealth law or regulation, including Commonwealth criminal trespass law. Certain exceptions can apply to agents of the Service and Commonwealth conservation agencies.

The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits for these three species will ever be sought or issued, since the species are not known to be in cultivation and are uncommon in the wild. Requests for copies of the regulations on listed plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, room 432, Arlington, Virginia 22203 (703/358–2104).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Mitracarpus maxwelliae, Mitracarpus polycladus* and *Eugenia woodburyana;*

(2) The location of any additional populations of these three species, and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of these species; and

(4) Current or planned activities in the subject areas and their possible impacts on these three species.

Final promulgation of the regulation on *Mitracarpus maxwelliae, Mitracarpus polycladus* and *Eugenia woodburyana* will take into consideration the comments and any additional information received by the Service, and such communications may lead to the adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the proposal. Such requests must be made in writing and addressed to the Field Supervisor, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boquerón, Puerto Rico 00622.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

Center for Plant Conservation. 1992. Report on the rare plants of Puerto Rico. Missouri Botanical Garden, St. Louis, Missouri.

Department of Natural Resources. 1993. Natural Heritage Program status information on *Mitracarpus maxwelliae Mitracarpus polycladus* and *Eugenia woodburyana*. San Juan, Puerto Rico.

Liogier, Alain H. 1980. Novitates Antillanae. VIII. Phytologia 47(3):167–198.

Proctor, G. R. 1991a. Status report on *Mitracarpus maxwelliae* Britton & Wilson. In Publicación Científica Miscelánea No. 2, Departamento de Recursos Naturales de Puerto Rico. 196 pp.

Proctor, G. R. 1991b. Status report on *Mitracarpus polycladus* Urban. In Publicación Científica Miscelánea No. 2, Departamento de Recursos Naturales de Puerto Rico. 196 pp.

Author

The primary author of this proposed rule is Ms. Susan Silander, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boquerón, Puerto Rico 00622 (809/851–7297).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, the Service hereby proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. § 17.12(h) is amended by adding the following, in alphabetical order, under Myrtaceae and Rubiaceae, to the list of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
*	*	*	*	*	*	*
Myrtaceae—Myrtle family:						
Eugenia woodburyana.	None	U.S.A. (PR)	E		NA	NA
*	*	*	*	*	*	*
Rubiaceae—Coffee family:						

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
*	*	*	*	*	*	*
Mitracarpus maxwelliae.	None	U.S.A. (PR)	E		NA	NA
Mitracarpus polycladus.	None	U.S.A. (PR)	E		NA	NA
*	*	*	*	*	*	*

Dated: November 22, 1993.

Richard N. Smith,

Acting Deputy Director, Fish and Wildlife Service.

[FR Doc. 93–32053 Filed 12–30–93; 8:45 am]

BILLING CODE 4310–55–P

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50 CFR Part 17

RIN 1018–AC12

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Puerto Rican Broad-winged Hawk and the Puerto Rican Sharp-shinned Hawk

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine the Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*) and the Puerto Rican sharp-shinned hawk (*Accipiter striatus venator*) to be endangered pursuant to the Endangered Species Act (Act) of 1973, as amended. These uncommon woodland raptors are restricted to montane, government-owned forests along the Cordillera Central, Sierra de Cayey and Sierra de Luquillo. There are approximately 155 sharp-shinned hawks and 124 broad-winged hawks island-wide. Both species are currently threatened by: Timber harvest and management practices in the forests; road construction in relation to timbering and recreational activities; increase in numbers of recreational facilities, and the disturbance associated with public use; mortality and habitat destruction from hurricanes; the lack of comprehensive management plans for the Commonwealth forests; possible loss of genetic variation due to low population levels: and the potential for illegal shooting. The Puerto Rican sharp-shinned hawk is also affected by warble fly parasitism. This proposal, if made final, would provide these species with the Act's protection and recovery provisions. The Service seeks data and comments from the public on this proposal.

DATES: Comments from all interested parties must be received by May 3, 1994. Public hearing requests must be received by February 17, 1994.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Caribbean Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622. Comments and materials received will be available for public inspection, by appointment, during normal business hours, at the Caribbean Field Office and at the Service's Southeast Regional Office, suite 1282, 75 Spring Street, SW., Atlanta, Georgia 30303.

FOR FURTHER INFORMATION CONTACT: Ms. Marelisa Rivera at the Caribbean Field Office address (809/851–7297), or Mr. Dave Flemming at the Atlanta Regional Office address (404/331–3583).

SUPPLEMENTARY INFORMATION:

Background

The broad-winged hawk (*Buteo platypterus*) was first reported in Puerto Rico by Gundlach (1878). He reported this species as "common" in the "interior" of Puerto Rico. Stahl (1883) reported the species as "transient". In the first half of the 20th century, the species was not reported by other naturalists that visited the island (Bowdish 1902, Wetmore 1914, and Danforth 1931). Wetmore (1927) believed the species extinct. Danforth and Smyth (1935) collected a specimen in Luquillo (Caribbean National Forest) and described it as a distinct resident subspecies, the Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*). Danforth (1936) reported sightings of broad-winged hawks from Utuado. Leopold (1963) reported the species from Luquillo, Utuado and Maricao forests.

The Puerto Rican broad-winged hawk is a dark chocolate brown, small-sized hawk that measures approximately 39 centimeters (15.5 inches). It is smaller than *Buteo platypterus platypterus* but larger than the Lesser Antillean subspecies. This is the darkest subspecies of the broad-winged hawk. In adults, the tail, broadly banded with black and white, and the rufous breast are characteristic. Immature birds have dark bars on the breast and lack the distinctive tail bands of the adult. Broadwings flap more than the similar but larger red-tailed hawk (Raffaele 1989). Knowledge of the biology of the Puerto Rican broad-winged hawk is limited. Snyder et al. (1987) conducted food-habit studies on one of the three nests found in the Caribbean National Forest in 1976 and one nest found in Río Abajo in 1978. The prey types taken included centipedes, frogs, lizards, mice, rats and birds (including some as large as 200 grams). Studies of breeding biology, habitat requirements and other aspects of this species' biology are not available in the literature.

The Puerto Rican broad-winged hawk is an uncommon and extremely local resident. Extant populations are restricted to montane habitats of three forests: Río Abajo Commonwealth Forest, Carite Commonwealth Forest and Caribbean National Forest. Breeding has not been documented in the Carite forest (Hernández 1980, Snyder et al. 1987). In the mid-1980's, the population in the Caribbean National Forest was estimated to be 40–60 individuals and 15–20 breeding pairs (Santana and Temple 1984, Snyder et al. 1987). The broad-winged hawks were more often seen in the eastern side of the Caribbean National Forest, and the tabonuco and palo colorado forest types were reported to be the preferred habitats for the species (Wiley and Bauer 1985). In 1992, 12 broad-winged hawks were sighted in the Caribbean National Forest and the population was estimated at 22 individuals (Delannoy 1992). These individuals were observed to be clustered in the north-central part of the forest within the subtropical wet forest and subtropical rain forest life zones, where the tabonuco is the dominant forest type.

Very little is known about the Río Abajo and Carite forest populations. However, it appears that the existence of the Río Abajo population was known by Danforth (1936) and Leopold (1963) since they both reported sightings of broad-winged hawks from Utuado.

Snyder et al. (1987) believed that the Río Abajo forest sustains not more than 50 individuals. Delannoy (1992) reported 26 broad-winged hawks, or an estimated population of 52 individuals, in the Río Abajo forest. The Puerto Rican broad-winged hawk was unknown from the Carite forest until 1980, when the existence of a resident population present year-round was reported (Hernández 1980). In 1992, 20 broad-winged hawks were censused in the Carite forest and a population of 22 individuals was estimated (Delannoy 1992). In the Carite forest the species has been reported from the elfin, caimitillo, granadillo, tabonuco, and slope forest types (Hernández 1980, Delannoy 1992).

The 206.4 square kilometers censused in three forests (Río Abajo, Carite and Caribbean National Forest) in 1992 yielded a count of 58 broad-winged hawks, and a total population estimate of 124 individuals (Delannoy 1992). Sightings of the broad-winged hawk have been reported from other areas, such as Cayey (next to the Carite forest), Utuado, Jayuya, Adjuntas, Villalba, and the Maricao and Toro Negro forests (Leopold 1963, Pérez-Rivera and Cotte-Santana 1977). Nevertheless, Delannoy (1991) established that the Maricao and Toro Negro forests do not have resident populations. Broad-winged hawks have been searched for, but not sighted, in upland forested habitats in Utuado, Jayuya, Adjuntas, Orocovis, and Barranquitas (Delannoy 1992).

The sharp-shinned hawk (*Accipiter striatus*) is a polytypic species with nine subspecies distributed in the western hemisphere, from Alaska to Canada south to Argentina and to the West Indies (Cuba, Hispaniola and Puerto Rico) (Wattel 1973). The Puerto Rican sharp-shinned hawk was first discovered in 1912 in the Maricao Commonwealth Forest, and described as a distinct subspecies, *Accipiter striatus venator* (Wetmore 1914).

The Puerto Rican sharp-shinned hawk is a small hawk measuring approximately 28–33 centimeters (11–13 inches). The dark slate gray upper parts and heavily barred rufous underparts of the adults are distinctive. Immatures are brown above and heavily streaked below. It has a short, squared tail, often appearing notched when folded, and a small head and neck. In flight, the short, rounded wings and long, narrow tail are characteristic (Raffaele 1989).

Extant breeding populations of the Puerto Rican sharp-shinned hawk were located in the mountain forest of the Maricao Commonwealth Forest, Toro Negro Commonwealth Forest, Guilarte Commonwealth Forest, Carite Commonwealth Forest and Caribbean National Forest (Cruz and Delannoy 1986). Sixty individuals were counted in island-wide surveys conducted in 1983, and a breeding density of .73 hawks/km^2 was estimated (Cruz and Delannoy 1986). In 1985, 72 individuals were counted and a breeding population of .76 hawk/km^2 (230–250 island-wide) were estimated in island-wide surveys (Cruz and Delannoy 1986). In 1992, 285.6 square kilometers censused yielded 82 sharp-shinned hawks; 40 were counted in Maricao, 30 in Toro Negro, 10 in Carite and 2 in the Caribbean National Forest. An overall population of 129 individuals has been estimated for these forests (Delannoy 1992). Although the Guilarte forest population was not censused in 1992, a population of 25 individuals was estimated for the forest in 1985 (Cruz and Delannoy 1986).

Studies on breeding and nesting habitat of this species, conducted by Cruz and Delannoy (1986) showed that the sharp-shinned hawk population in Maricao nests in both natural and modified (*Calophyllum* plantation) habitats. Plantation nest sites tended to have large canopy trees and fewer understory trees than natural forest nest sites. Sharp-shinned hawks appear to select plantation and natural forest nest sites with similar vegetative structure and topography. Results suggested that special vegetation structural requirements (closed canopies and dense stands) are sought by the Puerto Rican sharp-shinned hawks in the selection of nest sites in Maricao and apparently in other parts of its range in Puerto Rico (Cruz and Delannoy 1986). Furthermore, these authors reported low reproductive success, high desertion of eggs, and high nestling mortality due to parasitism by the warble fly *Philornis* spp.

The center of sharp-shinned hawk courtship and territorial activities in Maricao forest was located in the north-central and eastern parts, within the subtropical lower montane wet forest and subtropical wet forest life zones. In the Carite forest, territorial and courtship activities occurred in the northeastern and north-central parts, within the caimitillo-granadillo forest types (Delannoy 1992). In Toro Negro, these activities took place in the elfin woodland, sierra palm, caimitillo-granadillo and tabonuco forest types. In the Caribbean National Forest, the only two sharp-shinned hawks sighted (a solitary territorial pair) were detected in the south-central part of the forest, confined to the palo colorado forest type of the lower montane forest life zone (Delannoy 1992).

Although the sharp-shinned hawk was previously known from the karst region of Río Abajo and Guajataca Commonwealth Forests, Cruz and Delannoy (1986) did not find any evidence of its presence in these areas. Fossil evidence indicates that the species was once more widespread in the karst region (Wetmore 1922). Sharp-shinned hawks have been searched for and not sighted in Cambalache, Vega, Susua, and Guánica forests (Cruz and Delannoy 1986).

On November 24, 1980, the Service received a petition from Dr. Warren B. King from the International Council for Bird Preservation requesting that the Puerto Rican broad-winged hawk and the Puerto Rican sharp-shinned hawk (and other bird species) be added to the List of Endangered and Threatened Wildlife. On May 12, 1981, the Service published a notice of petition acceptance and status review in the **Federal Register** (46 FR 26464).

In the case of any petition accepted by the Service as containing substantial information, Section 4(b)(3) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*), as amended in 1982, requires that a subsequent finding be made within 12 months as to whether the measure is warranted, not warranted, or warranted but precluded by higher priority listing actions. In regard to the Puerto Rican broad-winged hawk, the Service has made administrative findings of "warranted but precluded" each year, beginning in October of 1983, as required by the Act. In the case of the Puerto Rican sharp-shinned hawk, a status survey completed in 1986 resulted in a final petition finding of "not warranted" that was announced in the **Federal Register** of April 25, 1990 (55 FR 17475).

In the Service's notice of review for vertebrate candidates published in the **Federal Register** of December 30, 1982 (47 FR 58454) and September 18, 1985 (50 FR 37958), both hawks were included as category 2 species, i.e., taxa for which there is information to indicate that listing may be appropriate, but for which there is insufficient data to support a listing proposal. In the animal notice of review published January 6, 1989 (54 FR 554), the Puerto Rican sharp-shinned hawk was moved to category 3C based on status information gathered in 1986. Category 3C taxa are those that do not presently qualify for the Act's protection due to absence of significant threats. The Puerto Rican broad-winged hawk was retained in category 2 for the 1989 notice of review and for the subsequent

notice published November 21, 1991 (56 FR 58804).

Status surveys conducted in 1991 and 1992 indicated that both species have experienced recent population declines, exist in low numbers, have restricted distribution and currently face significant threats. Based on this information, the Service recently that elevated both hawks to category 1 and is now proposing them for endangered status. The current proposed rule represents the final finding on the petitioned action for the Puerto Rican broad-winged hawk.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in Section 4(a)(1). These factors and their application to the Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*) and the Puerto Rican sharp-shinned hawk (*Accipiter striatus venator*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The Puerto Rican broad-winged hawk and the Puerto Rican sharp-shinned hawk are uncommon and extremely local residents. Extant populations of the broad-winged hawk and the sharp-shinned hawk are restricted to three and five montane forests, respectively. The destruction and modification of forested habitats in Puerto Rico may be one of the most significant factors affecting the numbers and distribution of these hawk species. The patchy distribution of both species may have resulted from the fragmentation of forested habitats. During the first half of the 20th century, forested areas were drastically reduced for intensive agricultural uses. Only small areas of the montane forests remained. In the last half of this century early secondary forests have developed in areas that are no longer under intensive cultivation, and these secondary forests connect patches of more mature forests that were previously isolated. Nevertheless, both hawk species are restricted to the mature montane forests and have not been observed in these secondary forests (Delannoy, pers. comm.). Both species were searched for, but not sighted, in other upland forested habitats in central parts of Puerto Rico.

Extant populations of these species occur in low numbers. The total population estimate of 124 broad-winged hawks island-wide is very low. Broad-winged hawks have experienced a local population decline of approximately 50 percent in the Caribbean National Forest (Delannoy 1992). Total population numbers are significantly low in both the Carite and Río Abajo forests. The sharp-shinned hawk has experienced a 60 percent decline in the Carite forest and 93 percent decline in the Caribbean National Forest (Delannoy 1992).

Timber harvest and management practices that would result in a reduction in numbers or in the diminishing of habitat quality of species already limited in their abundance and distribution could be detrimental. Cruz and Delannoy (1986) found that 50 percent of the nesting areas in the Maricao forest were in plantations of maría (*Calophyllum brasiliense*). They established that timber harvest and management practices could have negative effects on sharp-shinned hawks if vegetation structural features such as high stem density and canopy closure were not maintained. Adequate nest site habitat in the Maricao forest was considered to be in limited supply. Any activities that modify required structural features of vegetation in sharp-shinned hawk nesting areas could result in the reduction of the effective population size. Sharp-shinned hawks showed a strong nest site tenacity and returned year after year to the same nesting areas (Cruz and Delannoy 1986).

Road construction in the forests (related to timber programs and/or recreational activities) could result in substantial habitat alteration and fragmentation. Also, roads could provide a chronic source of human disturbance, reducing habitat effectiveness for species with a strong need for isolation. Roads could increase animal harvest and the introduction of exotic fauna. Road construction and/or road repair have been proposed in the Caribbean National Forest. In the Río Abajo forest, the construction of highway P.R. 10 from Arecibo to Ponce, which has been under way for several years, could affect the broad-winged hawk population. Delannoy (1992) documented, from the P.R. Highway and Transportation Authority files, that approximately 2.5 kilometers of the P.R. 10 will enter and cut through forest land in the northeastern corner, where high densities of broad-winged hawks were detected. Bulldozer activities were reported less than 500 meters from lookout sites in the forest. He estimated that approximately 3.79 hectares of apparently prime broad-winged hawk habitat will be destroyed by the road.

Construction of recreational facilities has been proposed for the western and northern sides of the Caribbean National Forest, areas where both species occur. Such recreation facilities could potentially eliminate habitat or bring human activities too close to preferred nesting areas. Raptors are particularly sensitive to disturbance near their nesting territories. In the Carite forest increasing pressure for new recreation facilities has been identified (Delannoy 1992). In the Maricao forest, Cruz and Delannoy (1986) found that nest failures related to direct human harassment ranked third in importance among all causes. Five nesting areas in Maricao forest are in, or less than 100 meters from, the camping and picnic areas. Some of the traditional nesting areas for the Puerto Rican sharp-shinned hawk in the Toro Negro forest lie near recreation facilities (Cruz and Delannoy 1986). Increased pressure for recreation from a growing human population could bring about frequent and regular human disturbance near nest sites.

Increased pressure for new right-of-way access to farms through the Carite forest land, and the establishment of new communication facilities, could also destroy prime habitat or bring human activities too close to broad-winged hawks. Delannoy (1992) documented that destruction of substantial caimitillo-granadillo habitat occurred in the right-of-way access through Camino El Seis in the north-central part of the Carite forest. This author also reported the establishment of new communication facilities along an access road through sector Farallón in the northwestern part of the forest where the highest broad-winged hawk densities have been reported.

In the Maricao forest, the Puerto Rico Energy Power Authority has a power substation located in the lower montane wet forest life zone, the center of sharp-shinned hawk nesting habitat. Many kilometers of aerial power lines run through forest lands. The access road for the substation is located adjacent to sharp-shinned hawk habitat in the subtropical wet forest life zone (Delannoy 1992). The construction of this access road resulted in the destruction of approximately 2.6 hectares of sharp-shinned hawk habitat (Delannoy 1992). The construction of new communication infrastructure or the enlargement of the existing infrastructure could potentially eliminate important sharp-shinned hawk habitat.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Taking for these purposes has not been a documented factor in the decline of these species. Nevertheless, the size and the appearance of these birds make them a potentially attractive target for some hunters.

C. Disease or Predation

The mortality of sharp-shinned hawk nestlings due to parasitism by the warble fly *Philornis* spp. has been documented. Studies conducted in Maricao forest attributed 61 percent of nestling mortality to *Philornis* parasitism (Cruz and Delannoy 1986).

D. The Inadequacy of Existing Regulatory Mechanism

The Puerto Rican sharp-shinned hawk was designated by the Commonwealth Department of Natural Resources as a threatened species in 1985. Existing Commonwealth regulations for the protection of threatened and endangered species have not been effective at preventing habitat destruction or alteration. The Puerto Rican broad-winged hawk is not protected by Commonwealth regulations.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

One of the most important factors affecting these species in Puerto Rico is their limited distribution and low numbers. The Puerto Rican broad-winged hawk experienced a local population decline of approximately 50 percent in the Caribbean National Forest (from 50 individuals in 1984 to 22 in 1992). The Puerto Rican sharp-shinned hawk experienced a 40 percent population decline in a period of 7 years (from 250 individuals in 1985 to 150 in 1992). Locally, the Carite population experienced a 60 percent decline, and the Caribbean National Forest population a 93 percent decline. Decline of both species has been attributed to possible direct and indirect effects from hurricane Hugo in 1989.

The extensive devastation from hurricanes may be particularly detrimental to species with small population size and long generation time, such as the broad-winged hawk and sharp-shinned hawk. Additionally, there may also be a long-term reduction in effective population size if the hawks prove to require habitat characteristics not presently available in the storm-damaged forest.

The lack of comprehensive management plans for the Commonwealth forests could be considered a serious threat for these species. In absence of such plans, policy makers and managers lack basic information on which to base decisions related to the best use and management of forest resources.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these two species in determining to propose this rule. Based on this evaluation, the preferred action is to list the Puerto Rican broad-winged hawk and the Puerto Rican sharp-shinned hawk as endangered.

The Puerto Rican broad-winged hawk populations are extremely small and limited to only three montane forests. Significant adverse effects to this species or its habitat could drive it to extinction. The potential for illegal shooting, increased human disturbance and the loss of prime habitat in the forests constitute serious threats to the continued survival of the species. The Puerto Rican sharp-shinned hawk has experienced a 40 percent decline in a period of 7 years. The potential for alteration of the species' habitat, human disturbance, illegal shooting, and nestling parasitism by warble flies constitute serious threats to the continued survival of the species. A decision to determine only threatened status would not adequately reflect the evident rarity and threats confronting these species. A decision to take no action would exclude these species from benefits provided by the Endangered Species Act. Endangered status is therefore appropriate.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time a species is proposed to be endangered or threatened. The Service's regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other activity and the identification of critical habitat can be expected to increase the degree of threat to the species or (2) such designation of critical habitat would not be beneficial to the species. The Service finds that, in the case of the latter situation, designation of critical habitat is not prudent for these species due to lack of benefit.

Section 7(a)(2) and regulations codified at 50 CFR part 402 require Federal agencies to ensure, in consultation with and with the assistance of the Service, that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat, if designated. (See "Available Conservation Measures" section for a further discussion of Section 7.) As part of the development of this proposed rule, the U.S. Forest Service and the Puerto Rico Department of Natural Resources (DNR) were provided available information on the distribution and threats to the two hawks. Should any future projects be proposed in areas inhabited by these hawks, the two agencies will already have the information needed to determine if the species may be impacted by the proposed action.

Regulations promulgated for implementing Section 7 provide for both a jeopardy standard, based on listing alone, and for a destruction or adverse modification standard, in cases where critical habitat has been designated. The Puerto Rican broad-winged and sharp-shinned hawks occupy restricted areas within the borders of the Caribbean National Forest and several Commonwealth forests. Any significant adverse modification or destruction of their habitat would likely jeopardize their continued existence. Under these conditions, the standards for jeopardy and adverse modification are essentially equivalent. Therefore, no additional protection for the species would accrue from critical habitat designation that would not also accrue from listing these species. Once listed, the Service believes that protection of their habitat can be accomplished through the Section 7 jeopardy standard, and through Section 9 prohibitions against take. It is more likely, however, that any federally related actions of concern will receive early review and any problems will be resolved informally.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, Commonwealth, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the Commonwealth, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the

prohibitions against taking are discussed in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may adversely affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

In the case of the two hawks, Federal involvement relates to activities to be conducted or permitted by the U.S. Forest Service in the Caribbean National Forest, or by other Federal agencies in Commonwealth forests. Federal funds or permits could be involved in the construction, maintenance or enlargement of facilities such as power substations, communication towers, and roads and trails in Commonwealth forests. Federal funds could be utilized by the Department of Resources in the management of Commonwealth forests.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, hill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer it for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and Commonwealth conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the Puerto Rican broad-winged hawk and the Puerto Rican sharp-shinned hawk;

(2) The location of any additional populations of these two species, and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of these species; and

(4) Current or planned activities in the subject areas and their possible impacts on any of these two species.

Final promulgation of a regulation on the Puerto Rican broad-winged hawk and the Puerto Rican sharp-shinned hawk will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor, U.S. Fish and Wildlife Service, Caribbean Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to Section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

Bowdish, B.S. 1902. Birds of Porto Rico. The Auk 19: 356–366; The Auk 20: 10–23.

Cruz, A., and C.A. Delannoy. 1986. Status, breeding biology and conservation needs of the Puerto Rican sharp-shinned hawk, *Accipiter striatus venator*. Final report submitted to the U.S. Fish and Wildlife Service as specified in work contract no. 14–16–0004–82–031.

Danforth, S.T. 1931. Puerto Rican Ornithological Records. J. of Agriculture of the University of Puerto Rico 15: 33–106.

Danforth, S.T., and J.A. Smyth. 1935. The Puerto Rican forms of the broad-winged hawk. J. of Agriculture of the University of Puerto Rico 19:485–486.

Danforth, S.T. 1936. Los Pájaros de Puerto Rico. Rand McNally and Co., New York, U.S.A.

Delannoy, C.A. 1991. Status surveys of the Puerto Rican sharp-shinned hawk (*Accipiter striatus venator*) and Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*). First progress report submitted to the U.S. Fish and Wildlife Service as specified in work contract no. 14–16–0004–91–031.

Delannoy, C.A. 1992. Status surveys of the Puerto Rican sharp-shinned hawk (*Accipiter striatus venator*) and Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*). Final report submitted to the U.S. Fish and Wildlife Service as specified in work contract no. 14–16–0004–91–031.

Gundlach, J. 1878. Apuntes para la fauna Puerto-Riqueña. Aves. Anales de la Sociedad Española de Historia Natural de Madrid 7:141–422.

Hernández, E. 1980. Estudio de aves, reptiles y anfibios en la reserva forestal de Carite. Informe presentado como requisito del curso Ciencias Naturales 306, Programa de Mantenimiento Ambiental. Facultad de Ciencias Naturales, Universidad de Puerto Rico, Recinto de Río Piedras, Río Piedras, Puerto Rico.

Leopold, N. 1963. Checklist of birds of Puerto Rico and the Virgin Islands. Univ. of Puerto Rico Agric. Exp. Sta. Bull. 168.

Pérez-Rivera, R. and R. Cotte-Santana. 1977. Algunas notas sobre los falconiformes residentes en Puerto Rico. Science-Ciencia 4:89–95.

Raffaele, H.A. 1989. A guide of the Birds of Puerto Rico and the Virgin Islands. Princeton University Press, New Jersey.

Santana, E. and S. Temple. 1984. Management recommendations for the Puerto Rican parrot and red-tail hawk in Luquillo Experimental Forest. Final Report to the U.S. Forest Service under Cooperative Agreement Contract No. 19–80–393.

Snyder, N.F., J.W. Wiley and C.B. Kepler. 1987. The parrots of Luquillo: Natural history and conservation of the Puerto Rican parrot. Western Foundation of Vertebrate Zoology, Los Angeles, California.

Stahl, Agustín. 1883. Fauna de Puerto Rico. Aves. Clasificación Sistemática de los Animales que Corresponden a esta Fauna y Catálogo del Gabinete del Dr. Agustín Stahl en Bayamón, Puerto Rico. Imprenta del Boletín Mercantil.

Wattel, J. 1973. Geographical differentiation in the genus *Accipiter*. Nuttall Ornithol.Club.Publ. 13.

Wetmore, A. 1914. A new *Accipiter* from Puerto Rico with notes on the allied forms of Cuba and Sto. Domingo. Proc. Biol. Soc. Wash. 27:119–122.

Wetmore, A. 1922. Bird remains from the caves of Porto Rico. Bull. Amer. Mus. Nat. Hist. 46:297–333.

Wetmore, A. 1927. The Birds of Porto Rico and the Virgin Islands. Scientific Survey of Puerto Rico and the Virgin Islands. Vol. IX. New York Academy of Sciences, New York, U.S.A.

Wiley, J.W., and G.P. Bauer. 1985. Caribbean National Forest, Puerto Rico. American Birds 39:12–18.

Author

The primary author of this proposed rule is Ms. Marelisa Rivera, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boquerón, Puerto Rico 00622 (809/851–7297).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulations Promulgation

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

Part 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625. Stat. 3500; unless otherwise noted.

2. § 17.12(h) is amended by adding the following, in alphabetical order, under BIRDS, to the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
* * *	*	*	*	*	*	*	*
Birds							
* * *	*	*	*	*	*	*	*
Hawk, Puerto Rican broad-winged.	*Buteo platypterus brunnescens.*	U.S.A. (PR)	Entire	E		NA	NA
Hawk, Puerto Rican sharp-shinned.	*Accipiter striatus venator.*	U.S.A. (PR)	Entire	E		NA	NA
* * *	*	*	*	*	*	*	*

Dated: December 2, 1993

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

[FR Doc. 93–32052 Filed 12–30–93; 8:45 am]

BILLING CODE 4310–55–P

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50 CFR Part 17

RIN 1018–AC27

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Arabis perstellata

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine endangered status for the rock cress, *Arabis perstellata*. There are 2 varieties of *Arabis perstellata*. The small rock cress, *Arabis perstellata* var. *perstellata*, is currently known from 27 populations in Kentucky—24 in Franklin County, 2 in Owen County, and 1 in Henry County. The large rock cress, *Arabis perstellata* var. *ampla*, is known from only two populations in Rutherford County, Tennessee. The species is endangered because of either potential or current threats from habitat alteration due to residential, commercial, or industrial development; timber harvesting; grazing and trampling; and competition with native and exotic weedy species, especially the European garlic mustard (*Alliaria petiolata*). This proposal, if made final, would extend the protection of the Endangered Species Act of 1973, as amended (Act), to *Arabis perstellata*.

DATES: Comments from all interested parties must be received by March 4, 1994. Public hearing requests must be received by February 17, 1994.

ADDRESSES: Comments, materials, and requests for a public hearing concerning this proposal should be sent to the Field Supervisor, Asheville Field Office, U.S. Fish and Wildlife Service, 330 Ridgefield Court, Asheville, North Carolina 28806. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. J. Allen Ratzlaff at the above address (704/665–1195, Ext. 229).

SUPPLEMENTARY INFORMATION:

Background

Both varieties of *Arabis perstellata*, var. *ampla* (large rock cress) and var. *perstellata* (small rock cress) are perennial members of the mustard family (Brassicaceae). The large rock cress is known from only two counties in Tennessee, and the small rock cress is known from only three counties in Kentucky. Both varieties have round stems and alternate leaves. Their stems and foliage have a grayish coloration due to the large quantity of hairs. Their stems arise from horizontal bases and grow up to 80 centimeters (cm) (31.5 inches) long, often drooping from rock ledges. Each year a basal rosette of leaves is produced, and the new branches emerge from the old rosette of the previous season. Their lower leaves vary from 4 to 15 cm (1.6 to 5.9 inches) long and are obovate to oblanceolate with slightly toothed and pinnatifid margins. Their upper leaves are

smaller—up to 3.5 cm (1.4 inches) long—and are elliptic to oblanceolate, with coarse teeth along the margin. Both surfaces of their leaves are stellate-pubescent. The inflorescence is an elongate raceme with numerous flowers. Their flowers have four petals that are 3 to 4 millimeters (mm) (0.12 to 0.16 inch) long, are white to lavender, and have four pale green sepals that are 2 to 3 mm (0.08 to 0.12 inch) long. There are six stamens, with two shorter than the other four. The ovary is elongate, two-chambered, and develops into a silique. Fruiting stalks are about 1 cm (0.4 inch) long at maturity; siliques are up to 4 cm (1.6 inches) long and are covered with both simple and stellate hairs. Flowering occurs from late March to early May. Fruits mature from mid-May to early June. Their oblong seeds are reddish brown; somewhat flattened; about 1 mm (0.04 inch) long; and, in places, minutely hairy (Jones 1991).

Arabis perstellata was named by E. L. Braun from plants collected between 1936 and 1939 on wooded hillsides along Elkhorn Creek in Franklin County, Kentucky. Braun (1940) distinguished the new taxon from the similar *Arabis dentata* (Torr.) T. & G. (now called *Arabis shortii* [Fern.] Gleason) by its perennial habit; grayer, stellate pubescence of stems and leaves; and longer pedicels. Fernald (1946) treated *A. shortii* as a variety of *A. perstellata*, though it is now generally accepted that they represent two species (Kartesz and Kartesz 1980). In 1959, plants were discovered on steep limestone cliffs above the Stones River in Davidson County, Tennessee, by Dr. R. B. Channel. Rollins (1960) described these plants as *Arabis perstellata* var. *ampla* and distinguished them from the typical variety by their generally larger size, thinner and more entire leaves, and lesser pubescence. Rollins also reported the chromosome number of the Tennessee plants as n=7; the chromosome number of the Kentucky plants has yet to be determined.

Arabis perstellata is typically found on wooded steep slopes with limestone outcrops. The outcrops tend to be moist but not wet; rarely, plants can be found on seepy outcrops. They also may be found in protected areas, such as around the bases of larger trees, or in areas where there is little competition, such as around areas regularly scoured by talus movement or erosion. The plants have a well-developed system of rootstocks that allow them to persist in these inhospitable sites. Sometimes the plants display a weedy tendency, colonizing recent road cuts or animal paths through the woodlands. The plants exhibit definite shade/light requirements, surviving in full shade or filtered light, but are not found in full sunlight (Jones 1991).

The distribution of *Arabis perstellata* var. *perstellata* shows a strong correlation with the Kentucky River and its tributaries (primarily Elkhorn Creek), with the greater majority of sites occurring in Franklin County. No sites have been found south of Frankfort along the Kentucky River, although appropriate habitat appears to be present. *Arabis perstellata* var. *ampla* is also associated with calcareous bluff habitat of a specific river—the Stones River. The two extant populations are somewhat atypical compared to historic sites because they occur on rocky knobs about 15 miles from the Stones River (Jones 1991). The following is a description of the status of each variety of the species within each State where the species occurs; the information is primarily from Jones (1991).

All known *Arabis perstellata* var. *ampla* populations in Tennessee are from the Cumberland River Subsection of the Central Basin Physiographic Region. Prior to the status survey conducted by Jones (1991), there were three records of large rock cress in Davidson County and two in Rutherford County. All three of the sites in Davidson County have been extirpated, and one of the sites in Rutherford County could not be relocated. One additional population was discovered in Rutherford County during the status survey. Of the two remaining populations, one is small—about 25 plants—and covers about 0.06 acre. The other population contains several hundred plants scattered over about 2.2 acres. Both sites are on private land and are threatened by competition by weedy invaders.

All known *Arabis perstellata* var. *perstellata* populations in Kentucky are from the Eden Shale Belt Subsection of the Blue Grass Physiographic Region. Prior to the status survey conducted by Jones (1991), there were three counties in Kentucky with occurrence records for the small rock cress—1 in Henry County, 2 in Owen County, and 26 in Franklin County. One site in Owen County and seven sites in Franklin County have been extirpated. There was insufficient information to locate four other historic records (2 in Franklin County and 2 from unknown counties). However, 8 new populations were discovered during the status survey, and the 27 known small rock cress sites in Kentucky are distributed as follows: 1 population from Henry County, 2 populations from Owen County, and 24 populations from Franklin County. Of these 27 populations, 22 of them have fewer than 100 individual plants and 12 have 20 or fewer. The immediate threats to the 27 remaining populations include the following: (1) Eight are threatened by weedy competitors, (2) four by weedy competitors and trampling, (3) two by trampling, (4) one by logging, and (5) one by road work. The remaining 11 populations do not appear to have any immediate threats but are vulnerable to the aforementioned threats as well as other habitat alterations and potential inbreeding problems as neighboring populations decline. All of the Kentucky populations are privately owned. Three receive limited protection through their inclusion in State designated natural areas.

Federal government actions on these species began with section 12 of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered endangered, threatened, or extinct. This report, designated as House Document No. 94–51, was presented to Congress on January 9, 1975. On July 1, 1975, the Service published a notice (40 FR 27823) that formally accepted the Smithsonian report as a petition within the context of section 4(c)(2) (now section 4(b)(3)) of the Act. By accepting this report as a petition, the Service also acknowledged its intention to review the status of those plant taxa named within the report. *Arabis perstellata* var. *ampla* and *Arabis perstellata* var. *perstellata* were included in the Smithsonian report and in the July 1, 1975, Notice of Review. On June 16, 1976, the Service published a proposed rule (41 FR 24523) to determine approximately 1,700 vascular plant taxa to be endangered species pursuant to Section 4 of the Act; *Arabis perstellata* var. *ampla* and *Arabis perstellata* var. *perstellata* were included in that proposal.

The 1978 amendments to the Act required that all proposals over 2 years old be withdrawn. In the December 10, 1979, **Federal Register** (44 FR 70796), the Service published a notice withdrawing plants proposed on June 16, 1976. The revised Notice of Review for Native Plants published on December 15, 1980 (45 FR 82480), included *Arabis perstellata* var. *ampla* and *Arabis perstellata* var. *perstellata* as category 1 candidates. Category 1 candidates are those for which the Service has on file substantial information on biological vulnerability and threats to support the appropriateness of proposing to list the taxa as threatened or endangered. These species were retained in their respective categories when the Notice of Review

for Native Plants was revised in 1983 (48 FR 53640) and 1985 (50 FR 39526), but *Arabis perstellata* var. *ampla* was then thought to be possibly extinct. In the 1990 Notice of Review (55 FR 6184), *Arabis perstellata* var. *ampla* was changed to a category 2 species due to the uncertainty of its status. Category 2 species are those for which the Service has information indicating that proposing to list them as endangered or threatened may be appropriate but for which substantial data on biological vulnerability and threats are not currently known or on file to support the preparation of rules. The Service funded surveys in 1989 to determine the status of *Arabis perstellata* var. *perstellata* in Kentucky. The contractors conducting the status survey for *Arabis perstellata* var. *perstellata* included a review of *Arabis perstellata* var. *ampla* in Tennessee. Final reports on these surveys were accepted by the Service in 1991.

Section 4(b)(3)(B) of the Act, as amended in 1982, requires the Secretary to make certain findings on pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 amendments further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This was the case for *Arabis perstellata* var. *ampla* and *Arabis perstellata* var. *perstellata* because of the acceptance of the 1975 Smithsonian report as a petition. On October 13, 1983, and in October of each year thereafter, through 1992, the Service found that the petitioned listing of *Arabis perstellata* var. *perstellata* and *Arabis perstellata* var. *ampla* was warranted but precluded by work on higher priority species. The Service's present decision to propose *Arabis perstellata* for listing is based on results of the above-mentioned status survey and current priorities, and it represents the final petition finding for the large and small rock cresses.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the 2 varieties of rock cress, *Arabis perstellata* var. *ampla* (large rock cress) and *Arabis perstellata* var. *perstellata* (small rock cress), are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

Arabis perstellata var. perstellata—Of the 27 known populations of small rock cress, 16 are threatened with destruction or adverse modification of their habitat—8 by weedy competitors, 4 by weedy competitors and trampling, 2 by trampling, 1 by logging, and 1 by road work. The remaining 11 populations do not appear to have any immediate threats but are vulnerable to the aforementioned threats as well as other habitat alterations and potential inbreeding problems as neighboring populations decline. Active management is required to ensure that the species continues to survive at all sites.

Arabis perstellata var. *ampla*—Both of the remaining large rock cress populations in Tennessee are threatened from competition by weedy invaders and potentially by livestock grazing and trampling. Also, the smaller site appears to be made up of older individuals, and there is little evidence of reproduction (Jones 1991).

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

At this time there is little or no commercial trade in *Arabis perstellata* var. *ampla* or *Arabis perstellata* var. *perstellata*. Most populations of the species are very small and cannot support the collection of plants for scientific or other purposes. Collecting for scientific purposes or as a novelty could pose a threat to the species.

C. Disease or Predation

Disease and predation do not appear to be factors affecting the continued existence of the species at this time (Jones 1991).

D. The Inadequacy of Existing Regulatory Mechanisms

The large rock cress is listed as endangered in Tennessee by Collins et al. (1978) and Somers (1989). Endangered species in Tennessee receive some protection through the "Rare Plant Protection and Conservation Act of 1985" (Tennessee Department of Conservation, 1987). The removal of plants from State properties for scientific, educational, or propagative purposes is controlled, as is the disturbance of the species on private lands without the landowner's consent. There is no protection for the species if its presence conflicts with public works projects (e.g., road building).

In Kentucky, the small rock cress is listed as endangered by the Kentucky Academy of Science and Kentucky State Nature Preserves Commission (Branson et al. 1981, Warren et al. 1986). These lists, however, have no legal standing in the State.

Should *Arabis perstellata* be added to the Federal list of endangered and threatened species, additional protection from taking will be provided to any populations of rock cress that may be discovered on Federal land and to other populations when the taking is in violation of any State law, including State trespass laws. Protection from inappropriate commercial trade would also be provided.

E. Other Natural or Manmade Factors Affecting the Species' Continued Existence

Both varieties of rock cress, *Arabis perstellata* var. *ampla* and *Arabis perstellata* var. *perstellata* could be facing potential inbreeding problems as neighboring populations decline.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by *Arabis perstellata* in determining to propose this rule. Based on this evaluation, the preferred action is to list *Arabis perstellata* as an endangered species. Both varieties of the plant face imminent threats and are in danger of extinction throughout their range. In accordance with the definition found in section 3(6) of the Act, such a species would qualify for designation as endangered. Proposing threatened status would not be consistent with the apparent status of the species.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate any habitat of a species, which is considered to be critical habitat, at the time the species is determined to be endangered or threatened. The Service's regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other activity and the identification of critical habitat can be expected to increase the degree of threat to the species or (2) such designation of critical habitat would not be beneficial to the species. The Service finds that designation of critical habitat is not prudent for this species due to both situations.

Most populations of this species are small, and the loss of even a few individuals to activities such as collection for scientific purposes could

extirpate the species from some locations. Taking, without permits, is prohibited by the Act from locations under Federal jurisdiction; however, none of the known populations of *Arabis perstellata* is under Federal jurisdiction. Therefore, publication of a critical habitat description and maps would increase the vulnerability of the species without significantly increasing protection.

Regulations promulgated for the implementation of Section 7 of the Act provide for both a "jeopardy" standard and a "destruction or adverse modification" of critical habitat standard. Due to the highly precarious status of this species, any significant adverse modification or destruction of the species' habitat would also likely jeopardize the species' continued existence, thereby triggering both standards. Therefore, no additional protection for the plant would accrue from critical habitat designation that would not also accrue from listing of the species.

The owners and managers of all the known populations of *Arabis perstellata* will be made aware of the plant's locations and of the importance of protecting the plant and its habitat even though critical habitat is not being designated. No additional benefits would result from a determination of critical habitat. If listed, habitat protection for this plant would be accomplished through the section 7 "jeopardy" standard and section 9 prohibitions against take.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

All *Arabis perstellata* populations are on privately owned land or in road rights-of-way. No current Federal actions have been identified that would affect these plants. However, Federal involvement associated with such actions as road construction may have limited potential for affecting these plants in the future.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general prohibitions and exceptions that apply to all endangered plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, would apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale this species in interstate or foreign commerce, or to remove and reduce to possession the species from areas under Federal jurisdiction. In addition, for endangered plants, the 1988 amendments (Pub. L. 100–478) to the Act prohibit the malicious damage or destruction on Federal lands and the removal, cutting, digging up, or damaging or destroying of endangered plants in knowing violation of any State law or resolution, including State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits would ever be sought or issued because the species is not common in cultivation or in the wild. Requests for copies of the regulations on listed plants and inquiries regarding prohibitions and permits may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Room 420–C, Arlington, Virginia 22203 (703/358–2104).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned government agencies, the scientific community, industry, or any other interested party concerning these proposed rules are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Arabis perstellata;*

(2) The location of any additional populations of *Arabis perstellata* and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of this species; and

(4) Current or planned activities in the subject area and their possible impacts on *Arabis perstellata.*

Final promulgation of regulations on *Arabis perstellata* will take into consideration the comments and any additional information received by the Service, and such communications may lead to the adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of this proposal. Such requests must be made in writing and should be addressed to the Field Supervisor, Asheville Field Office, U.S. Fish and Wildlife Service, 330 Ridgefield Court, Asheville, North Carolina 28806.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

Branson, B. A., D. F. Harker, Jr., J. M. Baskin, M. E. Medley, D. L. Batch, M. L. Warren, Jr., W. H. Davis, W. C. Houtcooper, B.

Monroe, Jr., L. R. Phillippe, and P. Cupp. 1981. Endangered, threatened, and rare animals and plants of Kentucky. Transactions of the Kentucky Academy of Science 42:77–89.
Braun, E. L. 1940. New plants from Kentucky. Rhodora 42:47–49.
Collins, J. L., H. R. DeSelm, A. M. Evans, R. Kral, and B. E. Wofford. 1978. The rare vascular plants of Tennessee. Journal of the Tennessee Academy of Science 53:128–133.
Fernald, M. L. 1946. Identification and reidentifications of North American Plants. Rhodora 48:207–216.
Jones, R. L. 1991. Status Survey Report on *Arabis perstellata* var. *perstellata*. Unpublished report to the Asheville Field Office, U.S. Fish and Wildlife Service, Asheville, North Carolina. 94 pp.
Kartesz, J., and R. Kartesz. 1980. A synonymized checklist of the vascular flora of the United States, Canada, and Greenland. University of North Carolina Press, Chapel Hill, North Carolina.
Rollins, R. 1960. *Arabis perstellata* in Tennessee. Rhodora 62:242–244.
Somers, P. 1989. Revised list of the rare plants of Tennessee. Journal of the Tennessee Academy of Science 64:179–184.
Tennessee Department of Conservation, Division of Ecological Services. 1987. The rare plant protection and conservation act of 1985. Nashville, Tennessee.
Warren, M. L., Jr., W. H. Davis, Branson, R. R. Hannan, M. Evans, D. L. Batch, B. D. Anderson, B. Palmer-Hall, Jr., J. R. MacGregor, R. R. Cicerello, R. Athey, B. A. Branson, G. J. Fallo, B. M. Burr, M. E. Medley, and J. M. Baskin. 1986. Endangered, threatened, and rare plants and animals of Kentucky. Transactions of the Kentucky Academy of Science 47:84–97.

Author

The primary author of these proposed rules is Mr. J. Allen Ratzlaff, Asheville Field Office, U.S. Fish and Wildlife Service, 330 Ridgefield Court, Asheville, North Carolina 28806 (704/665–1195, Ext. 229).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulations Promulgation

Accordingly, the Service proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. § 17.12(h) is amended by adding the following, in alphabetical order, under Brassicaceae, to the List of Endangered and Threatened Plants, to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Brassicaceae—Mustard family:						
*	*	*	*	*	*	
Arabis perstellata	Rock cress	U.S.A. (TN, KY)	E		NA	NA
*	*	*	*	*	*	

Dated: December 2, 1993.

Richard N. Smith,

Acting Director, Fish and Wildlife Service

[FR Doc. 93–32077 Filed 12–30–93; 8:45 am]

BILLING CODE 4310–55–P

Notices

Federal Register
Vol. 59, No. 1
Monday, January 3, 1994

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

[TMD–93–00–5]

Notice of Meeting for National Organic Standards Board and the Livestock Committee of the Board

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Notice.

SUMMARY: In accordance with the Federal Advisory Committee Act (Public Law 92–463), as amended, the Agricultural Marketing Service (AMS) announces a forthcoming meeting of the National Organic Standards Board (NOSB).

DATES AND TIMES: January 29, 1994 from 10 a.m. to 5 p.m. for the Livestock Committee and noon January 30, 1994 to noon February 2, 1994 for the entire NOSB. Adjournment for the day and reconvening times for the next day will be determined at the meetings.

PLACE: Westpark Hotel, 1900 North Fort Meyer Drive, Rosslyn, Virginia. All meetings of the NOSB for the week will be held at that address.

FOR FURTHER INFORMATION CONTACT: Dr. Harold S. Ricker, Staff Director, NOSB, Room 4006 South Building, USDA, AMS, Transportation and Marketing Division, P.O. Box 96456, Washington, DC 20090–6456. Phone (202) 720–2704.

SUPPLEMENTARY INFORMATION: Section 2119 (7 U.S.C. 6518) of the Food, Agriculture, Conservation, and Trade Act of 1990 (FACT Act), as amended (7 U.S.C. Section 6501 *et seq.*) requires establishment of a NOSB. The purpose of the Board is to assist in the development of standards for substances to be used in organic production and to advise the Secretary on any other aspects of the implementation of Title XXI of the FACT Act. The NOSB met for the first time in Washington, D.C. in March 1992 and formed six committees to work on various aspects of the program. The committees are: Crops Standards; Processing, Labelling and Packaging; Livestock Standards; Accreditation; National Materials List; and International Issues.

PURPOSE AND AGENDA: The Livestock Committee will convene to discuss and review processing and slaughter practices, a position on parasiticides, and responses to the committee position on antibiotics. The main focus of the meetings of the entire Board is to provide opportunities for discussion of issues being considered by working committees. The last meeting of the NOSB in September 1993 provided considerable time for the committees to present their issues and papers for discussion with the full Board. This meeting will continue to have the committees presenting their draft positions to the full Board for discussion and possible concurrence.

The full Board will be addressing administrative procedures for completion of documents as final recommendations to the Secretary in addition to discussing Committee papers. Topics to be covered in the full Board meeting include processing standards and processing materials needed for the National List of approved and prohibited substances; continued work on the development of the accreditation requirements and criteria for a peer review panel and for certifying agents; and material inputs for organic crop production, developed by the Crops Committee; antibiotics position and parasiticides position papers by the Livestock Committee; import requirements for organic products; and discussion of materials being developed by the various committees for consideration for the National List. A final agenda will be available on January 10, 1994. Persons requesting copies should contact Ms. Faith Ashton at the above address or phone number.

TYPE OF MEETING: All meetings will be open to the public. Individuals and organizations wishing to provide written comments on these issues or to express public comment on any organic issues should forward the request to Harold S. Ricker at the above address or faxed to (202) 690–0338 by January 21, 1994, in order to be scheduled. The NOSB has scheduled time for public input on Monday, January 31, 1994, beginning at 9 a.m. and continuing until noon. While people may sign up to speak at the door, advance scheduling assures an opportunity in the time allowed and helps the NOSB plan its activities. Each individual or organization will be allocated 10 minutes for presenting orally the key issues of concern, and should provide copies of written material elaborating on those issues for the Committees.

Dated: December 27, 1993.

Lon Hatamiya,
Administrator.

[FR Doc. 93–32029 Filed 12–30–93; 8:45 am]

BILLING CODE 3410–02–P

Farmers Home Administration

Housing Preservation Grants

AGENCY: Farmers Home Administration, USDA.

ACTION: Notice.

SUMMARY: The Farmers Home Administration (FmHA) announces that it is soliciting competitive applications under its Housing Preservation Grant (HPG) program. This action is taken to comply with Agency regulations found in 7 CFR part 1944, Subpart N, which requires the Agency to announce the opening and closing dates for receipt of preapplications for HPG funds from eligible applicants. The intended effect of this Notice is to provide public agencies, private nonprofit organizations, and other eligible entities notice of these dates. The HPG program will be available to provide repair and rehabilitation assistance to owner(s) of single or multi-unit rental properties and cooperative housing projects, as well as homeowners. This is the first time the HPG program will be available to provide repair and rehabilitation assistance to owners of rental properties. Also, the selection criteria has been changed from the previous year.

DATES: FmHA hereby announces that it will begin receiving preapplications on January 3, 1994. The closing date for acceptance by FmHA of preapplications is on April 4, 1994. This period will be the only time during the current fiscal year that FmHA accepts preapplications. Preapplications must be received by or postmarked on or before this date.

ADDRESSES: Submit preapplications to FmHA field offices; applications must contact their FmHA State Office for this information.

FOR FURTHER INFORMATION CONTACT: Sue M. Harris, Senior Loan Officer, Multi-family Housing Processing Division, FmHA, USDA, room 5337, South Agriculture Building, Washington, DC 20250, telephone (202) 720–1606 (This is not a toll free number.)

SUPPLEMENTARY INFORMATION: 7 CFR part 1944, Subpart N provides details on what information must be contained in the preapplication package. Entities wishing to apply for assistance should contact the FmHA State Office to receive further information and copies of the application package. Eligible entities for these competitively awarded grants include State and local governments, nonprofit corporations, Federally recognized Indian Tribes, and consortia of eligible entities.

This program is listed in the Catalog of Federal Domestic assistance under No. 10.443, Housing Preservation Grants. This program is subject to the provisions of Executive Order 12372 which requires intergovernmental consultation with State and local officials (7 CFR part 3015, subpart V; 48 FR 29115, June 24, 1983). Applicants are also referred to 7 CFR part 1944, Sections 1944.674 and 1944.676 (d) and (e) for specific guidance on these requirements relative to the HPG program.

The funding instrument for the HPG program will be a grant agreement. The term of the grant can vary from 1 to 2 years, depending on available funds and demand. No maximum or minimum grant levels have been set, although based on fiscal year (FY) 1991 and FY 92 experience, the Agency anticipates that the average grant will be between $100,000 and $150,000 for 1 year proposal. For FY 94, $23,000,000 is available and has been distributed under a formula allocation to States pursuant to 7 CFR part 1940, subpart L, "Methodology and Formulas for Allocation of Loan and Grant Funds."

Decisions on funding will be based on the preapplications, and notices of action on the preapplications should be made no earlier than 66 days prior to the closing date.

Dated: November 30, 1993.

Sharron S. Longino,

Acting Administrator, Farmers Home Administration.

[FR Doc. 93–30302 Filed 12–30–93; 8:45 am]

BILLING CODE 3410–07–M

Forest Service

BlueGrass Bound Timber Sale; Idaho Panhandle National Forests; Boundary County, ID

AGENCY: Forest Service, USDA.

ACTION: Notice; cancellation of notice of intent to prepare an environmental impact statement.

SUMMARY: On August 31, 1993, notice was published in the **Federal Register** (FR 45879) that an environmental impact statement would be prepared to assess the effects of timber harvest and road construction within the Boundary Creek Drainage on the Bonners Ferry Ranger District, Idaho Panhandle National Forests.

That notice is hereby cancelled.

Changes in Agency direction will result in significant changes to the proposed action and the purpose and need for the proposed action. A new Notice of Intent to prepare an environmental impact statement will appear in the **Federal Register** in the early 1994.

DATE: This action is effective on January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Mark Grant, NEPA Coordinator, Bonners Ferry Ranger District, Route 4 Box 4860, Bonners Ferry, Idaho 83805, (208) 267–5561.

Dated: December 17, 1993.

Debbie Henderson-Norton,

District Ranger, Bonners Ferry Ranger District, Idaho Panhandle National Forests.

[FR Doc. 93–32024 Filed 12–30–93; 8:45 am]

BILLING CODE 3410–11–M

Food and Nutrition Service

Food Distribution Program; Level of Assistance From October 1, 1993 to September 30, 1994

AGENCY: Food and Nutrition Service, USDA.

ACTION: Notice.

SUMMARY: This notice announces the initial level of per-meal assistance for the Nutrition Program for the Elderly (NPE) for Fiscal Year 1994. The initial level of assistance is set at $.6146 for each eligible meal in accordance with section 311(a)(4) of the Older Americans Act of 1965, as amended by section 310 of the Older Americans Act Amendments of 1992.

EFFECTIVE DATE: October 1, 1993.

FOR FURTHER INFORMATION CONTACT: Philip K. Cohen, Program Administration Branch, Food Distribution Division, Food and Nutrition Service, U.S. Department of Agriculture, 3101 Park Center Drive, Alexandria, Virginia 22302–1594 or telephone (703) 305–2660.

SUPPLEMENTARY INFORMATION:

Classification

This program is listed in the Catalog of Federal Domestic Assistance under Nos. 10.550 and 10.570 and is subject to the provisions of Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 7 CFR part 3015, subpart V, and final rule related notice published at 48 FR 29114, June 24, 1983.)

This notice imposes no new reporting or recordkeeping provisions that are subject to Office of Management and Budget review in accordance with the Paperwork Reduction Act of 1980 (44 U.S.C. 3507). This action is not a rule as defined by the Regulatory Flexibility Act (5 U.S.C. 601–612) and thus is exempt from the provisions of that Act.

Legislative Background

On September 30, 1992, the President signed Public Law 102–375, the Older Americans Act Amendments of 1992. Section 310 of this law amended section 311(a)(4) of the Older Americans Act of 1965, 42 U.S.C. 3030a(a)(4), to require the Secretary of Agriculture to maintain an annually programmed level of assistance equal to the greater of: (1) The current appropriation divided by the number of meals served in the preceding fiscal year; or (2) 61 cents per meal adjusted annually beginning with Fiscal Year 1993 to reflect changes in the Consumer Price Index (CPI). Section 311(c)(2) of the Older Americans Act was amended to provide that the final reimbursement claims shall be adjusted to use the full amount appropriated for the fiscal year.

Notwithstanding the initial rates established by the Older Americans Act, the Department must comply with the spending clause of the U.S. Constitution and 31 U.S.C. 1341(a)(1)(A) (known as the Antideficiency Act), which prohibit the obligation or expenditure of funds in excess of the available appropriation. Thus the Department is required to establish (and, if necessary, adjust) rates in such a manner as to not exceed the program appropriation.

In Fiscal Year 1994, a situation exists similar to that at the beginning of Fiscal Year 1993, i.e., the Fiscal Year 1994 appropriation will not sustain reimbursement at the mandated annually adjusted rate. However, the Agriculture, Rural Development, Food and Drug Administration, and Related

Agencies Act of 1993 (Public Law 103–111), which appropriated NPE funding for Fiscal Year 1994, imposed additional rate management requirements for this year. Title IV, *Domestic Food Programs*, of the Act provides that " * * * a maximum rate of reimbursement to States will be established by the Secretary, subject to reduction if obligations would exceed the amount of available funds, with any unobligated funds to remain available for obligation in the fiscal year beginning October 1, 1994." Thus the Department cannot increase the initially announced Fiscal Year 1994 rate, and can decrease this rate only if it cannot be sustained throughout the year.

Fiscal Year 1994 Rate and Procedures

Senate Report No. 102, 103rd Cong., 1st Sess., at 125 (July 20, 1993) clarifies the congressional intent of Public Law 103–111 with regard to the 1994 level of NPE funding by identifying the FY 1994 rate as " * * * the maximum reimbursement per meal permitted by law as estimated by the Secretary at the beginning of the fiscal year within the level of available funds." Thus the Department is required to establish the highest initial per-meal reimbursement rate which it believes can be sustained throughout the fiscal year.

Accordingly, the Department hereby announces an initial rate of $.6146 per meal, which will not be increased, and which can be decreased only if necessary to keep expenditures within the limit of the $150 million NPE appropriation established by Public Law 103–111. This consistent and stable rate will enable State agencies to better plan and budget their operations, and local project operators can, in turn, depend on a steady, uniform flow of meal service support during the fiscal year. Any funds not paid out for Fiscal Year 1994 reimbursement will, in accordance with legislative mandate, be carried over into Fiscal Year 1995 and expended in per-meal reimbursement for that year. In the unlikely event that the rate needs to be decreased, the adjustment will be announced in the **Federal Register**.

Dated: December 10, 1993.

George A. Braley,

Acting Administrator, Food and Nutrition Service.

[FR Doc. 93–32047 Filed 12–30–93; 8:45 am]

BILLING CODE 3410–30–U

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[Order No. 667]

Star Enterprise, (Oil Refinery), Convent, LA; Grant of Authority for Subzone Status

Pursuant to its authority under the Foreign-Trade Zones Act of June 18, 1934, as amended (19 U.S.C. 81a-81u), the Foreign-Trade Zones Board (the Board) adopts the following Order:

Whereas, by an Act of Congress approved June 18, 1934, an Act "To provide for the establishment * * * of foreign-trade zones in ports of entry of the United States, to expedite and encourage foreign commerce, and for other purposes," as amended (19 U.S.C. 81a-81u) (the Act), the Foreign-Trade Zones Board (the Board) is authorized to grant to qualified corporations the privilege of establishing foreign-trade zones in or adjacent to U.S. Customs ports of entry;

Whereas, the Board's regulations (15 CFR part 400) provide for the establishment of special-purpose subzones when existing zone facilities cannot serve the specific use involved;

Whereas, an application from the South Louisiana Port Commission, grantee of Foreign-Trade Zone 124, for authority to establish a special-purpose subzone for the refinery facilities of Star Enterprise, Convent, Louisiana, was filed by the Board on March 21, 1991, and notice inviting public comment was given in the **Federal Register** (FTZ Docket 16–91, 56 FR 13797, 4–4–91); and,

Whereas, the Board has found that the requirements of the Act and Board's regulations would be satisfied, and that approval of the application would be in the public interest if approval is subject to the conditions listed below;

Now, therefore, the Board hereby authorizes the establishment of a subzone (Subzone 124C) at the Star Enterprise refinery facilities in Convent, Louisiana, at the location described in the application, subject to the FTZ Act and the Board's regulations, including § 400.28, and subject to the following conditions:

1. Foreign crude oil or products used as fuel for the refinery shall be dutiable.

2. Star shall elect privileged foreign status on foreign crude oil and other foreign products admitted to the subzone, except as indicated below.

3. Star may elect nonprivileged foreign status with respect to foreign crude oil that is associated with sulfur by-product that results from the refining process, based on an appropriate allocation method to be determined by Customs. This initial approval is limited to a period of three years beginning from the date of activation, subject to extension.

Signed at Washington, DC, this 21st day of December 1993.

Barbara R. Stafford,

Acting Assistant Secretary of Commerce for Import Administration, Chairman, Committee of Alternates Foreign-Trade Zones Board.

Attest:

John J. Da Ponte, Jr.,

Executive Secretary.

[FR Doc. 93–32074 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

[Order No. 666]

Sanden International (U.S.A.), Inc., (Automotive Air-Conditioner Components), Wylie, TX; Grant of Authority for Subzone Status

Pursuant to its authority under the Foreign-Trade Zones Act of June 18, 1934, as amended (19 U.S.C. 81a-81u), the Foreign-Trade Zones Board (the Board) adopts the following Order:

Whereas, by an Act of Congress approved June 18, 1934, an Act "To provide for the establishment * * * of foreign-trade zones in ports of entry of the United States, to expedite and encourage foreign commerce, and for other purposes," as amended (19 U.S.C. 81a-81u) (the Act), the Foreign-Trade Zones Board (the Board) is authorized to grant to qualified corporations the privilege of establishing foreign-trade zones in or adjacent to U.S. Customs ports of entry;

Whereas, the Board's regulations (15 CFR Part 400) provide for the establishment of special-purpose subzones when existing zone facilities cannot serve the specific use involved;

Whereas, an application from the Dallas/Fort Worth International Airport Board, grantee of Foreign-Trade Zone 39, for authority to establish a special-purpose subzone at the automotive air-conditioner components manufacturing plant of Sanden International (U.S.A.), Inc., in Wylie, Texas (Dallas/Fort Worth Customs port of entry area), was filed by the Board on December 21, 1992, and notice inviting public comment was given in the **Federal Register** (FTZ Docket 37–92, 58 FR 78, 01–04–93); and,

Whereas, the Board has found that the requirements of the FTZ Act and Board's regulations are satisfied, and that approval of the application is in the public interest;

Now, therefore, the Board hereby authorizes the establishment of a

subzone (Subzone 39C) at the Sanden International (U.S.A.), Inc., plant in Wylie, Texas, at the location described in the application, subject to the FTZ Act and the Board's regulations, including § 400.28.

Signed at Washington, DC, this 23rd day of December, 1993.

Barbara R. Stafford,

Acting Assistant Secretary of Commerce for Import Administration, Chairman, Committee of Alternates, Foreign-Trade Zones Board.

Attest:

John J. Da Ponte, Jr.,

Executive Secretary.

[FR Doc. 93–32073 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

[Order No. 668]

Star Enterprise (Oil Refinery), Port Arthur, TX; Grant of Authority for Subzone Status

Pursuant to its authority under the Foreign-Trade Zones Act of June 18, 1934, as amended (19 U.S.C. 81a–81u), the Foreign-Trade Zones Board (the Board) adopts the following Order:

Whereas, by an Act of Congress approved June 18, 1934, an Act "To provide for the establishment * * * of foreign-trade zones in ports of entry of the United States, to expedite and encourage foreign commerce, and for other purposes," as amended (19 U.S.C. 81a–81u) (the Act), the Foreign-Trade Zones Board (the Board) is authorized to grant to qualified corporations the privilege of establishing foreign-trade zones in or adjacent to U.S. Customs ports of entry;

Whereas, the Board's regulations (15 CFR Part 400) provide for the establishment of special-purpose subzones when existing zone facilities cannot serve the specific use involved;

Whereas, an application from the Foreign-Trade Zone of Southeast Texas, grantee of Foreign-Trade Zone 116, for authority to establish a special-purpose subzone for the refinery facilities of Star Enterprise, in Jefferson and Hardin Counties (Port Arthur area), Texas, was filed by the Board on March 21, 1991, and notice inviting public comment was given in the **Federal Register** (FTZ Docket 17–91, 56 FR 13799, 4–4–91); and,

Whereas, the Board has found that the requirements of the Act and Board's regulations would be satisfied, and that approval of the application would be in the public interest if approval is subject to the conditions listed below;

Now, therefore, the Board hereby authorizes the establishment of a subzone (Subzone 116A) at the Star Enterprise refinery facilities in Jefferson and Hardin Counties (Port Arthur area), Texas, at the location described in the application, subject to the FTZ Act and the Board's regulations, including § 400.28, and subject to the following conditions:

1. Foreign crude oil or products used as fuel for the refinery shall be dutiable.

2. Star shall elect privileged foreign status on foreign crude oil and other foreign products admitted to the subzone, except as indicated below.

3. Star may elect nonprivileged foreign status with respect to foreign crude oil that is associated with sulfur by-product that results from the refining process, based on an appropriate allocation method to be determined by Customs. This initial approval is limited to a period of three years beginning from the date of activation, subject to extension.

Signed at Washington, DC, this 21st day of December 1993.

Barbara R. Stafford,

Acting Assistant Secretary of Commerce for Import Administration, Chairman, Committee of Alternates, Foreign-Trade Zones Board.

Attest:

John J. Da Ponte, Jr.,

Executive Secretary.

[FR Doc. 93–32075 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

[Order No. 670]

Expansion of Foreign-Trade Zone 84, Houston, TX

Pursuant to its authority under the Foreign-Trade Zones Act of June 18, 1934, as amended (19 U.S.C. 81a—81u), the Foreign-Trade Zones Board (the Board) adopts the following Order:

Whereas, an application from the Port of Houston Authority, Texas, grantee of Foreign-Trade Zone No. 84, for authority to expand its Zone Site 11 at the liquid bulk storage facility of Oiltanking of Houston, Inc., Houston, Texas, within the Houston Customs port of entry, was filed by the Foreign-Trade Zones (FTZ) Board on December 22, 1992 (Docket 38–92, 58 FR 3532, 9/30/93);

Whereas, notice inviting public comment was given in the **Federal Register** and the application has been processed pursuant to the FTZ Act and the Board's regulations; and,

Whereas, the Board has found that the requirements of the Act and the regulations are satisfied, and that approval would be in the public interest, provided that the restrictions in Board Order 409 authorizing the site apply to the expanded site;

Now, therefore, the Board hereby orders:

The grantee is authorized to expand its zone as requested in the application, subject to the Act and the Board's regulations, including Section 400.28, and further subject to the restrictions contained in Board Order 409 (53 FR 53042, 12–30–88).

Signed at Washington, DC, this 23rd day of December 1993.

Barbara R. Stafford,

Acting Assistant Secretary of Commerce for Import Administration, Chairman, Committee of Alternates Foreign-Trade Zones Board.

Attest:

John J. Da Ponte, Jr.,

Executive Secretary.

[FR Doc. 93–32076 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

International Trade Administration

[A–791–502]

Brazing Copper Wire and Rod From South Africa; Intent To Revoke Antidumping Duty Order

AGENCY: International Trade Administration/Import Administration, Department of Commerce.

ACTION: Notice of intent to revoke antidumping duty order.

SUMMARY: The Department of Commerce is notifying the public of its intent to revoke the antidumping duty order on brazing copper wire and rod from South Africa.

Domestic interested parties who object to this revocation must submit their comments in writing no later than January 31, 1994.

EFFECTIVE DATE: January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Valerie Turoscy or John Kugelman, Office of Antidumping Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230, telephone: (202) 482–5253.

SUPPLEMENTARY INFORMATION:

Background

On January 29, 1986, the Department of Commerce (the Department) published an antidumping duty order on brazing copper wire and rod from South Africa (51 FR 3640). The Department has not received a request to conduct an administrative review of this order for the most recent four consecutive annual anniversary months.

The Department may revoke an antidumping duty order or finding if the Secretary of Commerce concludes that it

is no longer of interest to interested parties. Accordingly, as required by § 353.25(d)(4) of the Department's regulations, we are notifying the public of our intent to revoke this antidumping duty order.

Opportunity to Object

No later than January 31, 1994, domestic interested parties, as defined in § 353.2(k) (3), (4), (5), and (6) of the Department's regulations, may object to the Department's intent to revoke this antidumping duty order.

Seven copies of any such objections should be submitted to the Assistant Secretary for Import Administration, room B–099, U.S. Department of Commerce, Washington, DC 20230.

If interested parties do not request an administrative review in accordance with the Department's notice of opportunity to request administrative review by January 31, 1994, or domestic interested parties do not object to the Department's intent to revoke by January 31, 1994, we shall conclude that the order is no longer of interest to interested parties and shall proceed with revocation.

This notice is in accordance with 19 CFR 353.25(d)(4)(i).

Dated: December 23, 1993.

Roland L. MacDonald,

Acting Deputy Assistant Secretary for Compliance.

[FR Doc. 93–32067 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–M

[A–570–814]

Certain Carbon Steel Butt-Weld Pipe Fittings From the People's Republic of China; Affirmative Preliminary Determination of Circumvention of Antidumping Duty Order

AGENCY: International Trade Administration/Import Administration, Department of Commerce.

ACTION: Notice of affirmative preliminary determination of circumvention of antidumping duty order.

SUMMARY: On July 21, 1993, the Department of Commerce received an application for a circumvention inquiry of the antidumping duty order on certain carbon steel butt-weld pipe fittings from the People's Republic of China. Pursuant to that application, the Department of Commerce initiated a circumvention inquiry on September 2, 1993, which was published in the **Federal Register** on September 13, 1993 (58 FR 47859).

We preliminarily determine that imports into the United States of pipe fittings that were finished in Thailand from unfinished pipe fittings produced in the People's Republic of China constitute circumvention of the antidumping duty order on certain carbon steel butt-weld pipe fittings from the People's Republic of China, within the meaning of section 781(b) of the Tariff Act of 1930, as amended. Interested parties are invited to comment on this preliminary determination.

EFFECTIVE DATE: January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Karin Price, Donald Little, or Maureen Flannery, Office of Antidumping Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230; telephone: (202) 482–4733.

SUPPLEMENTARY INFORMATION:

Background

On July 6, 1992, the Department of Commerce (the Department) published in the **Federal Register** (57 FR 29702) the antidumping duty order on certain carbon steel butt-weld pipe fittings (pipe fittings) from the People's Republic of China (PRC). On July 21, 1993, the petitioner, the U.S. Fittings Group, alleged that the antidumping duty order on pipe fittings from the PRC was being circumvented, and requested that the Department investigate the matter. The U.S. Fittings Group is an ad hoc trade association of domestic producers of pipe fittings; its members currently consist of Hackney, Inc.; Ladish Company, Inc.; L.A. Boiler Works, Inc.; Mills Iron Works, Inc.; Steel Forgings, Inc.; and Tube Forgings of America, Inc.

The petitioner alleged that the antidumping duty order on pipe fittings from the PRC is being circumvented through the shipment of unfinished pipe fittings produced in the PRC to Awaji Sangyo (Thailand) Company, Ltd. (AST), located in Thailand, which then finishes the pipe fittings and exports them to the United States free of antidumping duties. AST was excluded from the antidumping duty order on pipe fittings from Thailand (57 FR 29702, July 6, 1992) due to the finding of a *de minimis* margin for AST in the less-than-fair-value (LTFV) investigation of that case.

The petitioner requested, in accordance with section 781(b) of the Tariff Act of 1930, as amended, (the Tariff Act), that the Department conduct a circumvention inquiry. On September 2, 1993, pursuant to the petitioner's application, the Department initiated a circumvention inquiry in this matter. The notice of initiation of circumvention inquiry of the antidumping duty order on pipe fittings from the PRC was published in the **Federal Register** on September 13, 1993 (58 FR 47859).

On September 24, 1993 and September 28, 1993, respectively, the Department issued circumvention questionnaires to AST, and to the Ministry of Foreign Trade and Economic Cooperation (MFTEC) in the PRC on behalf of all manufacturers and sellers of pipe fittings in the PRC. AST responded to Part 1 of the questionnaire on October 4, 1993 and to Part 2 of the questionnaire on November 8, 1993. Mitsui & Company (Mitsui), on behalf of Shenzhen Fittings Manufacturing Factory (Shenzhen Factory), the Chinese supplier of unfinished pipe fittings to AST, responded to Part 1 of the questionnaire on October 15, 1993 and to Part 2 of the questionnaire on November 8, 1993. Shenzhen Factory is a limited partnership, in which Mitsui is the general partner. Neither MFTEC nor other Chinese manufacturers or sellers of the subject merchandise responded to the Department's questionnaire. The Department issued supplemental questionnaires to AST and to Mitsui on November 12, 1993 and November 16, 1993, respectively. The Department received AST's response to its supplemental questionnaire on November 23, 1993, and Mitsui's response to its supplemental questionnaire on November 29, 1993. The Department issued additional supplemental questionnaires to AST and Mitsui on December 3, 1993; responses were received on December 10, 1993.

The Department also issued a circumvention questionnaire to Thai Benkan Company, Ltd. (Thai Benkan), a Thai importer of unfinished tees manufactured by Shenzhen Factory, on November 8, 1993. The Department received a response from Thai Benkan on November 30, 1993, which was revised on December 2, 1993. Thai Benkan stated in its response that it has made no shipments of pipe fittings to the United States after November 1991.

The Department also issued a questionnaire to Silbo Industries, Inc. (Silbo), a U.S. importer of subject merchandise from Thailand and the PRC, on November 16, 1993. Silbo responded to part of the questionnaire on December 8, 1993. The remaining portion of its response is due to the Department on January 4, 1994. Additionally, the Department sent a questionnaire to another company whose name is proprietary. However, the response was untimely and was

returned and not considered for our determination.

Scope of the Antidumping Duty Order

Imports covered by the antidumping duty order are shipments of carbon steel butt-weld pipe fittings, having an inside diameter of less than 14 inches, imported in either finished or unfinished form. These formed or forged pipe fittings are used to join sections in piping systems where conditions require permanent, welded connections, as distinguished from fittings based on other fastening methods (e.g., threaded, grooved, or bolted fittings). Carbon steel butt-weld pipe fittings are currently classified under subheading 7307.93.30 of the Harmonized Tariff Schedule (HTS). Although the HTS subheading is provided for convenience and Customs purposes, our written description of the scope of this order remains dispositive.

Scope of the Anti-Circumvention Inquiry

The products subject to this circumvention inquiry are pipe fittings, as described above in the "Scope of the Antidumping Duty Order" section, which are exported in unfinished form from the PRC to Thailand, where some finishing is performed. We requested data for the period January 1, 1991 through August 31, 1993, except for pattern of trade data, which were requested for the period January 1, 1988 through August 31, 1993.

Nature of the Anti-Circumvention Inquiry

Section 781(b)(1) of the Tariff Act provides that if:

(A) Merchandise imported into the United States is of the same class or kind as any merchandise produced in a foreign country that is the subject of an antidumping duty order,

(B) Before importation into the United States, such imported merchandise is completed or assembled in another foreign country from merchandise which (i) is subject to such order, or (ii) is produced in the foreign country with respect to which such order applies,

(C) The difference between the value of such imported merchandise and the value of the merchandise completed or assembled in another foreign country is small, and

(D) The administering authority determines that action is appropriate under this paragraph to prevent evasion of such order,

the Department, after taking into account any advice provided by the U.S. International Trade Commission (ITC) under section 781(e), may include such imported merchandise within the scope of such order.

In determining whether to include merchandise assembled or completed in a foreign country within an order, section 781(b)(2) of the Tariff Act directs the Department to consider such other factors as (1) the pattern of trade, (2) whether the manufacturer or exporter of the merchandise produced in the country to which the order applies is related to the entity who uses such merchandise to assemble or complete in the foreign country the merchandise that is subsequently imported into the United States, and (3) whether imports into the foreign country of the merchandise produced in the country to which the order applies have increased after issuance of that order.

I. Statutory Criteria

(1) Class or Kind of Merchandise

In this inquiry, the merchandise completed in Thailand and exported to the United States is pipe fittings having an inside diameter of less than 14 inches. Thus, the product exported to the United States is of the same class or kind of merchandise as the product subject to the antidumping duty order.

(2) Merchandise Imported Into the United States Completed From Merchandise Subject to an Order

The pipe fittings finished in Thailand and exported to the United States were completed from unfinished "as-formed" pipe fittings manufactured in the PRC. Therefore, the merchandise exported to the United States is completed from merchandise subject to the antidumping duty order and produced in the country with respect to which the antidumping duty order applies.

(3) Difference in Value

In this anti-circumvention inquiry, we based our analysis of the difference in value on both a quantitative analysis of the value of the finishing process in Thailand, and a qualitative analysis of the nature of the processing performed in Thailand and the level of investment in Thailand. Such an analysis is consistent with our analysis in previous anti-circumvention inquiries. See, e.g., Granular Polytetrafluoroethylene Resin from Italy; Final Affirmative Determination of Circumvention of Antidumping Duty Order (58 FR 26100, April 30, 1993).

(a) Value of the Completed Merchandise. We used the selling price of the finished tees sold by AST to the United States on a model-specific, per kilogram basis to represent the value of the finished pipe fittings sold to the United States, as reported in AST's questionnaire response. The terms of sale for these sales were CIF U.S. port duty unpaid.

(b) Value of Thai Completion. In order to determine the value of the Thai completion, we used the cost of manufacturing at AST's factory which finished the tees from unfinished Chinese tees for each month during the period January 1, 1991 through August 31, 1993 in which the finishing occurred, as provided by AST. We allocated selling, general, and administrative expenses and profit from AST's financial statements, as well as an amount of Awaji Sangyo K.K. of Japan's export selling expenses as provided in AST's November 23, 1993 response, to AST's cost of manufacturing.

We used the value of the Thai completion, as provided by AST, because it was the most complete, verifiable information available. Complete factors data were unavailable for constructing the cost of the unfinished Chinese tees. For example, Shenzhen Factory was not able to provide the consumption rates of raw material inputs, other than steel pipe, used in manufacturing the unfinished tees or the number of labor hours used in the production process. Public data on electricity consumption for producing unfinished tees were also not available.

We calculated the difference in value percentage by dividing the value added in Thailand by the value of the completed merchandise. We preliminarily determine that the difference in value is 15 percent of the value of the completed merchandise. (Since the precise figure is business proprietary, the stated percentage is within a range of plus or minus 10 percent.) See December 22, 1993 proprietary analysis memorandum from case analyst to the File. In order to determine whether 15 percent is "small" within the meaning of the Tariff Act, we examined the nature of the processing performed in Thailand and the level of investment in Thailand.

Nature of Processing

According to the description of the manufacturing process provided by the ITC in its final affirmative determination of injury concerning imports of pipe fittings from the PRC and Thailand (see Certain Carbon Steel Butt-Weld Pipe Fittings from China and Thailand; Determinations of the Commission in Investigations Nos. 731–TA–520 and 521 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigations, USITC Publication 2628,

June 1992 at I–7 through I–10), the cold process is the most efficient process for forming tees which are less than 12 inches in diameter. In the cold process, the raw material pipe is first cut to length, and the section is enclosed in a die that matches the shape and size of the finished tee within a press. The die is then closed, plugs are used to seal the ends, and a fluid, such as water or a light oil, forces under pressure the metal into the shape of the die. This process produces the unfinished tee. Finishing steps re-round, resize, and anneal the unfinished tee.

The finishing steps involved in the production of pipe fittings include one or more of the following: shot blasting, machine beveling, boring and tapering, grinding, die stamping, inspection, and painting. According to the ITC, beveling, boring, and tapering add an estimated 11–20 percent of value, and the remaining finishing operations add an estimated 3–9 percent of value.

Mitsui's response indicates that Shenzhen Factory produces unfinished tees using a cold-forming method. After Shenzhen Factory cuts the raw material carbon steel pipe to a pre-determined length and lubricates the pipe on the exterior surface, it cold forms the pipe using the "Bulge Method," a process in which a hydraulic press is used.

AST receives the unfinished tees in this as-formed condition, with the bulging head closed. AST then cuts the bulging head off the tee, heat treats the "decapped" as-formed tee in order to prevent the steel material from becoming brittle from the stress of cold-forming, shot blasts the tees to remove heat scales from the surface, and bevels and precision machines the ends of the tees. These processes are then followed by cleaning, coating with an oxidizing agent or paint, and marking. AST does not provide any additional materials to the unfinished pipe fitting.

Based on the above description of the manufacturing process for tees and other pipe fittings, we preliminarily determine that the finishing operations performed by AST, or by any other Thai company, to finish pipe fittings are of minor value when compared to the production of the unfinished pipe fittings.

Level of Investment

AST has stated that it began in 1991 its tees conversion operation, i.e., the conversion of unfinished tees into finished tees, pursuant to a formal corporate decision made in the prior year. This was an interim step with the goal of producing tees in an integrated process, from the raw material pipe, by the end of 1993. The level of investment undertaken by AST, or which will be undertaken by AST, toward this goal indicates that the plant and equipment required to produce the as-formed tee from the raw material pipe is substantial as compared to that required for the finishing operations. See December 22, 1993 proprietary analysis memorandum from case analyst to the File.

We have determined that the finishing operations performed to finish unfinished tees provide limited value to the finished tee relative to the production process used to manufacture the unfinished tee. Moreover, the level of investment required to produce unfinished tees is significant when compared to that required to finish the unfinished tee. Accordingly, based on the qualitative factors discussed above, we preliminarily determine that the calculated difference in value percentage is "small" within the meaning of section 781(b) of the Tariff Act.

(4) Action is Appropriate to Prevent Evasion of the Order We preliminarily determine that action is appropriate to prevent the circumvention of the antidumping duty order on pipe fittings from the PRC. The Department has no other means to ensure that entries of Chinese pipe fittings finished by AST are suspended and any appropriate duties ultimately collected thereon, or to ensure that proper cash deposits are collected on entries of Chinese pipe fittings finished by other companies in Thailand.

II. Factors

(1) Pattern of Trade

To evaluate the pattern of trade factors in this case, we examined the timing and quantities of exports of pipe fittings from AST to the United States during the period January 1, 1988 through August 1, 1993. AST began exporting finished tees to the United States in 1991. Data on AST's exports of finished tees to the United States show a significant increase in the volume of these exports subsequent to the issuance of the antidumping duty order on pipe fittings from the PRC. We also examined data on Shenzhen Factory's exports to the United States for the period January 1, 1991 through August 31, 1993. These data indicate that the volume of Shenzhen Factory's exports to the United States decreased significantly subsequent to the issuance of the antidumping duty order on pipe fittings from the PRC.

Therefore, this factor indicates that circumvention may have been occurring during the period. See December 22, 1993 analysis memorandum from case analyst to the File.

Because an antidumping duty order on pipe fittings from Thailand was issued by the Department at the same time as the order on pipe fittings from the PRC, any comparison of the quantity of exports from Thailand to the United States with the quantity of exports from the PRC to the United States prior to and subsequent to the issuance of the orders would be meaningless. Therefore, we have not included such a comparison in our analysis.

(2) Relationship

Generally, we consider circumvention to be more likely when the manufacturer of the covered merchandise is related to the third country assembler. Our inquiry indicates that the relationship between AST, the third country assembler and exporter of the finished pipe fittings to the United States, and Mitsui and Shenzhen Factory, the entity which produced the unfinished pipe fittings sold to AST, was limited to the purchase/sale of the unfinished pipe fittings. Therefore, in this inquiry, no purchases of Chinese unfinished pipe fittings occurred between related parties within the meaning of section 773(e)(4) of the Tariff Act.

(3) Increase in Imports

Data on imports of unfinished pipe fittings into Thailand from Chinese manufacturers/sellers other than Shenzhen Factory were not available, and public data on imports of pipe fittings from the PRC into Thailand were not available for the period after June 1992. Therefore, to measure the increase in imports, we examined export data supplied by Shenzhen Factory for the period January 1, 1991 through August 31, 1993. It is clear that an increase in exports of unfinished tees from Shenzhen Factory to Thailand occurred after the issuance of the antidumping duty order on pipe fittings from the PRC. This increase corresponds to the increase of AST's exports of finished tees to the United States during the same period. See December 22, 1993 analysis memorandum from the case analyst to the File. Accordingly, this factor indicates that circumvention activities may have occurred.

Affirmative Preliminary Determination of Circumvention

After consideration of the factors discussed above, we preliminarily determine that circumvention of the antidumping duty order on pipe fittings from the PRC has occurred within the meaning of section 781(b) of the Tariff

Act. We base this determination on the following. First, the items completed in Thailand and sold to the United States are of the same class or kind of merchandise as that covered by the order, and are completed from merchandise produced in the PRC and covered by the order. Second, the difference in value between the unfinished pipe fittings sold to Thailand and the value of the finished pipe fittings exported to the United States is small. We note that our determination of "small" in this case is not necessarily synonymous with the determination of "small" that the Department has used in the past or that the Department will use in future anti-circumvention inquiries, because Congress has directed us to make such determinations on a case-by-case basis. Further, we find the pattern of trade and level of imports into Thailand indicate a finding of circumvention of the antidumping duty order. Finally, we find that action is appropriate to prevent evasion of the antidumping duty order. To this end, and in accordance with the purposes of section 781, we are applying this finding to all Thai manufacturers/exporters of the class or kind of merchandise, i.e., pipe fittings, subject to the certification requirements described below.

Requirement of Certification

Considered within the scope of the antidumping duty order on pipe fittings from the PRC are all imports from all producers into the United States of pipe fittings from Thailand, as defined in the "Scope of the Inquiry" section of this notice, unless accompanied by a certificate stating that such pipe fittings have not been produced from unfinished Chinese pipe fittings.

Suspension of Liquidation

In accordance with 19 CFR 353.29(j)(2), we are directing the U.S. Customs Service to suspend liquidation of all entries of pipe fittings from Thailand. The merchandise subject to suspension of liquidation is pipe fittings, as defined in the "Scope of Circumvention Inquiry" section of this notice, that are entered or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register**. (We note that entries of pipe fittings from Thailand, with the exception of AST's pipe fittings, are currently being suspended pursuant to the antidumping duty order on pipe fittings from Thailand (57 FR 29702, July 6, 1992).) For all such imports which are accompanied by a certificate stating that such pipe fittings have not been produced from unfinished Chinese pipe fittings, the U.S. Customs Service shall require a cash deposit or posting of a bond in the amount of the company-specific rate for the Thai manufacturer/exporter, or, if there is no company-specific rate for the Thai manufacturer or exporter, the "All Others" rate for pipe fittings from Thailand. For all such imports which are accompanied by a certificate stating that the merchandise was manufactured using Chinese unfinished pipe fittings and the name of the manufacturer of the Chinese unfinished pipe fittings, the U.S. Customs Service shall require a cash deposit or posting of a bond in the amount of the company-specific rate of the manufacturer of the Chinese unfinished pipe fittings. For all such imports which are accompanied by a certificate stating that such pipe fittings have been produced from unfinished Chinese pipe fittings, but do not provide the specific Chinese manufacturer, the U.S. Customs Service shall require a cash deposit or posting of a bond in the amount of the highest rate for pipe fittings from the PRC. For all other imports of pipe fittings from Thailand which are accompanied by an inadequate certificate, or no certificate, the U.S. Customs Service shall require a cash deposit or posting of a bond in an amount based on the higher of (1) the highest rate for any manufacturer/exporter of pipe fittings from the PRC, or (2) the rate for the Thai manufacturer/exporter, or, if there is no company-specific rate for the Thai manufacturer or exporter, the "All Others" rate for pipe fittings from Thailand.

This suspension of liquidation shall remain in effect until further notice.

Notification of the International Trade Commission

The Department, consistent with section 781(e)(1)(B) of the Tariff Act, will notify the ITC of this preliminary determination to include merchandise subject to this inquiry within the antidumping duty order on pipe fittings from the PRC. Pursuant to section 781(e)(2) of the Tariff Act, the ITC may request consultation concerning the Department's proposed inclusion of the subject merchandise. If, after consultations, the ITC believes that a significant injury issue is presented by the proposed inclusion, the ITC will have 60 days from the date of notification to provide written advice to the Department.

Public Comment

Interested parties may request disclosure within 5 days of the date of publication of this determination, and may request a hearing within 10 days of publication. Case briefs and/or written comments from interested parties may be submitted not later than February 16, 1994. Rebuttal briefs and rebuttals to written comments, limited to issues raised in those briefs or comments, may be filed not later than February 22, 1994. Any hearing, if requested, will be held on February 24, 1994. The Department will publish its final determination with respect to this anti-circumvention inquiry, including the results of its analysis of any written or oral comments.

This preliminary affirmative circumvention determination is in accordance with section 781(b) of the Tariff Act (19 U.S.C. 1677j(b)) and 19 CFR 353.29(f).

Dated: December 23, 1993.

Barbara R. Stafford,

Acting Assistant Secretary for Import Administration.

[FR Doc. 93–32066 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

[A–122–503]

Preliminary Results of Antidumping Duty Administrative Review; Iron Construction Castings From Canada

AGENCY: International Trade Administration/Import Administration, Department of Commerce.

ACTION: Notice of preliminary results of antidumping duty administrative review.

SUMMARY: In response to a request by the Municipal Castings Fair Trade Council and its individually-named members (petitioner), the Department of Commerce (the Department) has conducted an administrative review of the antidumping duty order on iron construction castings from Canada. The review covers 11 manufacturers and/or exporters of the subject merchandise to the United States during the period March 1, 1992, through February 28, 1993. For these preliminary results, we applied best information available (BIA) for 10 of the manufacturers/exporters. The review indicates the existence of dumping margins during the period.

We invite interested parties to comment on these preliminary results.

EFFECTIVE DATE: January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Lisa Raisner, Office of Antidumping Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230, telephone: (202) 482–3518.

SUPPLEMENTARY INFORMATION:

Background

On March 5, 1986, the Department published in the **Federal Register** (51 FR 17220) the antidumping duty order on iron construction castings from Canada. The petitioner requested in accordance with 19 CFR 353.22(a) that we conduct an administrative review. We published the notice of initiation on May 6, 1993 (58 FR 26960). The Department has now conducted that administrative review in accordance with section 751 of the Tariff Act of 1930, as amended (the Tariff Act).

Scope of the Review

Imports covered by this review are shipments of certain iron construction castings from Canada, limited to manhole covers, rings, and frames, catch basin grates and frames, cleanout covers and frames used for drainage or access purposes for public utility, water, and sanitary systems, classifiable as heavy castings under Harmonized Tariff Schedule (HTS) item numbers 7325.10.0010 and 7325.10.0050 and to valve, service, and meter boxes which are placed below ground to encase water, gas, or other valves, or water and gas meters, classifiable as light castings under HTS item numbers 8306.29.0000 and 8310.00.0000. The HTS item numbers are provided for convenience and Customs purposes only. The written description remains dispositive.

This review covers sales of certain Canadian iron construction castings by Associated Foundry Ltd., Bibby Foundry Ltd., Bibby Waterworks Inc., Dobney Foundry Ltd., Fonderie Bibby St. Croix, LaPerle Foundry Division (LaPerle), McCoy Foundry Company, Penticton Foundry Ltd., Titan Foundry Ltd., Titan Supply Ltd., and Trojan Industries, Inc., during the period March 1, 1992, through February 28, 1993.

Analysis

We received only one questionnaire response, and that was from LaPerle. Based on our analysis of this response, we have determined that LaPerle is related to other respondents in this review. LaPerle and its related entities meet all five criteria, in addition to ownership, that the Department considers in determining whether to collapse related parties, as laid out in Certain Granite Products for Spain, 53 FR 24335, 1988; Certain Granite Products for Italy 53 FR 27187, 1988; Steel Wheels from Brazil, 54 FR 8780, 1989; Cellular Mobile Telephones and Subassemblies from Japan, 54 FR 48011, 1989; and Final Determinations of Sales at Less Than Fair Value: Certain Hot-Rolled Carbon Steel Flat Products, Certain Cold-Rolled Carbon Steel Flat Products, Certain Corrosion-Resistant Carbon Steel Flat Products, and Certain Cut-to-Length Carbon Steel Plate from Canada, 58 FR 37099 (July 9, 1993). The five criteria, in addition to ownership, are as follows:

- Interlocking boards of directors;
- Similar production processes, facilities or equipment so as to facilitate shifting of production between facilities;
- Do not operate as separate and distinct entities;
- Share of marketing and sales information or offices; and
- Involvement in the pricing or production decisions of the other entity.

In conducting our analysis of related parties in this review, we issued two supplemental questionnaires and granted extensions for several of the responses. In spite of this, LaPerle did not provide us with enough information to adequately support its position as an independent entity. In addition, it did not consolidate all information for itself, including information for its U.S. affiliate(s) and related home market or third country firms whose information would be used in this review, as outlined in our questionnaire. Therefore, we have determined that LaPerle significantly impeded the proceedings. LaPerle was deemed uncooperative and, in accordance with section 776(c) of the Tariff Act, we applied BIA to LaPerle and its related parties.

Best Information Available

In accordance with section 776(c) of the Tariff Act, we have used BIA in cases where a party refused or was unable to produce information requested in a timely manner and in the form required, or otherwise significantly impeded these proceedings. The Department generally uses a two-tiered approach in its choice of BIA. For uncooperative respondents or respondents who substantially impede the proceedings (first tier), the Department uses the higher of (1) the highest rate for any company from the original investigation or prior administrative review or (2) the highest rate found in the current review for any company. For respondents which attempt to cooperate (second tier), the Department uses the higher of (1) the highest rate ever applicable to the firm for the subject merchandise or (2) the highest calculated rate in the current review for any firm (see Antifriction Bearings (Other than Tapered Roller Bearings) and Parts Thereof from France, et al., 58 FR 39729, July 26, 1993). For parties refusing to respond or parties who substantially impeded the administrative review, the first-tier BIA rate we applied in these preliminary results is 9.9 percent, which is the highest of the rates found for any firm in the original investigation (see Iron Construction Castings from Canada; Amendment to Final Determination of Sales at Less than Fair Value and Amendment to Antidumping Duty Order, 51 FR 34110, September 25, 1986).

For more information on these BIA applications to the above companies, see the analysis memorandum.

Preliminary Results of the Review

As a result of our review, we preliminarily determine that margins exist for the period March 1, 1992 through February 28, 1993, as follows:

Manufacturer/Exporter	Percent Margin
Associated Foundry Ltd.	9.9
Bibby Foundry Ltd	9.9
Bibby Waterworks Inc	9.9
Dobney Foundry Ltd	9.9
Fonderie Bibby St. Croix	9.9
LaPerle Foundry, Inc	9.9
McCoy Foundry Company	[1] 7.5
Penticton Foundry Ltd	9.9
Titan Foundry Ltd	9.9
Titan Supply Ltd	9.9
Trojan Industries, Inc	9.9

[1] No shipments during the period; since there was no prior review of this company, we assigned the all other rate from the less-than-fair-value (LTFV) investigation.

Interested parties may request disclosure within 5 days of the date of publication of this notice and may request a hearing within 10 days of publication. Any hearing, if requested, will be held 44 days after the date of publication or the first business day thereafter. Case briefs and/or written comments from interested parties may be submitted no later than 30 days after the date of publication. Rebuttal briefs and rebuttals to written comments, limited to issues raised in those comments, may be filed not later than 37 days after the date of publication of this notice. The Department will publish the final results of this administrative review including the results of its analysis of issues raised in any such written comments or at a hearing.

The Department shall determine, and the Customs Service shall assess, antidumping duties on all appropriate entries. The Department will issue appraisement instructions on each exporter directly to the Customs Service.

Furthermore, the following deposit requirements will be effective, upon publication of the notice of final results of this administrative review, for all shipments of the subject merchandise from Canada that are entered, or withdrawn from warehouse, for consumption on or after the publication date of this notice, as provided by section 751(a)(1) of the Tariff Act:

(1) The cash deposit rates for the reviewed companies will be those established in the final results of this administrative review; (2) for previously reviewed or investigated companies not listed above, the cash deposit rate will continue to be their company-specific rate published for the most recent period; (3) if the exporter is not a firm covered in this review or the original investigation, but the manufacturer is, the cash deposit rate will be the rate established for the most recent period for the manufacturer of the merchandise; and (4) if neither the exporter nor the manufacturer is a firm covered in this or any previous review, the cash deposit rate will be 7.5 percent, which is the "all other" rate established in the LTFV investigation, as discussed below.

On May 25, 1993, the Court of International Trade (CIT) in *Floral Trade Council* v. *United States*, Slip Op. 93–79, and *Federal-Mogul Corporation and the Torrington Company* v. *United States*, Slip Op. 93–83, decided that once an "all others" rate is established for a company, it can only be changed through an administrative review. The Department has determined that in order to implement these decisions, it is appropriate to reinstate the "all others" rate from the LTFV investigation (or that rate as amended for correction of clerical errors or as a result of litigation) in proceedings governed by antidumping duty orders.

This notice also serves as a preliminary reminder to importers of their responsibility under 19 CFR 353.26 to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in the Secretary's presumption that reimbursement of antidumping duties occurred and the subsequent assessment of double antidumping duties.

These administrative review and this notice are in accordance with section 751(a)(1) of the Tariff Act (19 U.S.C. 1675(a)(1) and 19 CFR 353.22(c).

Dated: December 23, 1993.

Barbara R. Stafford,

Acting Assistant Secretary for Import Administration.

[FR Doc. 93–32070 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–M

[A–122–701]

Potash From Canada; Intent To Terminate Suspended Investigation

AGENCY: International Trade Administration/Import Administration, Department of Commerce.

ACTION: Notice of intent to terminate suspended investigation.

SUMMARY: The Department of Commerce is notifying the public of its intent to terminate the suspended investigation on potash from Canada. Domestic interested parties who object to this termination must submit their comments in writing no later than January 31, 1994.

EFFECTIVE DATE: January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Eric Hassman or Melissa Skinner, Office of Agreements Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230, telephone: (202) 482–3793.

SUPPLEMENTARY INFORMATION:

Background

On January 19, 1988, the Department of Commerce (the Department) published a suspension of investigation on potash from Canada (53 FR 1393). The Department has not received a request to conduct an administrative review of this suspended investigation for the most recent four consecutive annual anniversary months.

In accordance with 19 CFR 353.25(d)(4)(iii), the Secretary of Commerce will conclude that a suspended investigation is no longer of interest to interested parties and will terminate the suspended investigation if no domestic interested party objects to termination and no interested party requests an administrative review by the last day of the fifth anniversary month. Accordingly, as request by § 353.25(d)(4)(i) of the Department's regulations, we are notifying the public of our intent to terminate this suspended investigation.

Opportunity to Object

No later than January 31, 1994, domestic interested parties, as defined in § 353.2(k) (3), (4), (5), and (6) of the Department's regulations, may object to the Department's intent to terminate this suspended investigation.

Seven copies of any such objections should be submitted to the Assistant Secretary for Import Administration, International Trade Administration, room B–099, U.S. Department of Commerce, Washington, DC 20230.

If interested parties do not request an administrative review (in accordance with the Department's notice of opportunity to request administrative review) by January 31, 1994, or domestic interested parties do not object to the Department's intent to terminate by January 31, 1994, we shall conclude that the suspension agreement is no longer of interest to interested parties and shall proceed with the termination.

This notice is in accordance with 19 CFR 353.25(d)(4)(i).

Dated: December 23, 1993.

Roland L. MacDonald,

Acting Deputy Assistant Secretary for Compliance.

[FR Doc. 93–32071 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–M

[A–583–603]

Stainless Steel Cooking Ware From Taiwan; Intent To Revoke Antidumping Duty Order

AGENCY: International Trade Administration/Import Administration, Department of Commerce.

ACTION: Notice of intent to revoke antidumping duty order.

SUMMARY: The Department of Commerce is notifying the public of its intent to revoke the antidumping duty order on stainless steel cooking ware from Taiwan. Domestic interested parties who object to this revocation must submit their comments in writing no later than January 31, 1994.

EFFECTIVE DATE: January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Valerie Turoscy or John Kugelman, Office of Antidumping Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230, telephone: (202) 485–5253.

SUPPLEMENTARY INFORMATION:

Background

On January 20, 1987, the Department of Commerce (the Department) published an antidumping duty order on stainless steel cooking ware from Taiwan (52 FR 2138). The Department has not received a request to conduct an administrative review of this order for the most recent four consecutive annual anniversary months.

The Department may revoke an antidumping duty order or finding if the Secretary of Commerce concludes that it is no longer of interest to interested parties. Accordingly, as required by § 353.25(d)(4) of the Department's regulations, we are notifying the public of our intent to revoke this antidumping duty order.

Opportunity to Object

No later than January 31, 1994, domestic interested parties, as defined in § 353.2(k) (3), (4), (5), and (6) of the Department's regulations, may object to the Department's intent to revoke this antidumping duty order.

Seven copies of any such objections should be submitted to the Assistant Secretary for Import Administration, room B–099, U.S. Department of Commerce, Washington, DC 20230.

If interested parties do not request an administrative review in accordance with the Department's notice of opportunity to request administrative review by January 31, 1994, or domestic interested parties do not object to the Department's intent to revoke by January 31, 1994, we shall conclude that the order is no longer of interest to interested parties and shall proceed with revocation.

This notice is in accordance with 19 CFR 353.25(d)(4)(i).

Dated: December 23, 1993.

Roland L. MacDonald,

Acting Deputy Assistant Secretary for Compliance.

[FR Doc. 93–32069 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–M

[C–351–037]

Cotton Yarn From Brazil; Preliminary Results of Countervailing Duty Administrative Review

AGENCY: International Trade Administration/Import Administration, Department of Commerce.

ACTION: Notice of preliminary results of countervailing duty administrative review.

SUMMARY: The Department of Commerce is conducting an administrative review of the countervailing duty order on cotton yarn from Brazil. We are terminating the review with respect to Companhia Brasileira de Fiacao, (CBF) and benefits received by this company are not included in the net subsidy rate of the Department's preliminary results.

We preliminarily determine the net subsidy to be 0.30 percent *ad valorem* for all producers and exporters of cotton yarn from Brazil for the period January 1, 1992 through December 31, 1992. In accordance with 19 CFR 355.7, any rate less than 0.50 percent *ad valorem* is *de minimis*. We invite interested parties to comment on these preliminary results.

EFFECTIVE DATE: January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Gayle Longest or Kelly Parkhill, Office of Countervailing Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 482–2786.

SUPPLEMENTARY INFORMATION:

Background

On March 12, 1993, the Department of Commerce (the Department) published in the **Federal Register** a notice of "Opportunity to Request Administrative Review" (58 FR 13583) of the countervailing duty order on cotton yarn from Brazil (42 FR 14089; March 15, 1977) for the period January 1, 1992 through December 31, 1992. On March 31, 1993, the Government of Brazil requested an administrative review for that period. We initiated the review on May 6, 1993 (58 FR 26960). The Department is conducting this review in accordance with section 751 of the Tariff Act of 1930, as amended (the Act). When examining Brazilian customs information at verification, we found that export information for non-subject merchandise, combed cotton yarn, had been inadvertently included in the questionnaire response. Brazilian officials were not aware that the Harmonized Tariff Schedule (HTS) numbers that covered combed cotton yarn were not included in the scope of this order. At verification, we found that one respondent, CBF, had no shipments of the subject merchandise to the United States during the review period. Therefore, we are terminating the review with respect to this company. The final results of the last administrative review of this order were published in the **Federal Register** on February 2, 1993 (58 FR 6779).

Scope of Review

Imports covered by this review are shipments of Brazilian yarn, carded but not combed, wholly of cotton. During the review period, such merchandise was classifiable under item numbers 5205.11.10, 5205.11.20, 5205.12.10, 5205.12.20, 5205.13.10, 5205.13.20, 5205.14.10, 5205.14.20, 5205.15.10, 5205.15.20, 5205.31.00, 5205.32.00, 5205.33.00, 5205.34.00, and 5205.35.00 of the HTS. The HTS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

The review covers the period January 1, 1992 through December 31, 1992, seven programs and the following eight producers/exporters of cotton yarn from Brazil: Companhia Industrial e Agricola Boyes, Companhia Textil do Vale, Cotonificio Guilherme Giorgi S.A., Fiacao Nordeste do Brasil S.A.—Finobrasa, Fiacao e Tecelagem Kanedo do Brasil S.A., Nisshinbo do Brasil Industria Textil Ltda., Toyobo do Brasil Industria Textil, and Unitika do Brasil Industria Textil Ltda.

Calculation Methodology for Assessment and Cash Deposit Purposes

In calculating the benefits received during the review period, we followed the methodology described in the preamble to 19 CFR 355.20(d) (53 FR 52325; December 27, 1988). First, we calculated a country-wide rate, weight-averaging the subsidy rates of the eight companies subject to review to determine the overall subsidy from all countervailing programs benefitting exports of the subject merchandise to the United States. Because the overall weighted-average country-wide rate was *de minimis*, as defined by 19 CFR 355.7, we did not proceed any further in our analysis.

Analysis of Programs

(1) Program That Provided Benefits During the Period of Review

a. Reductions of Taxes and Import Duties Through BEFIEX

The Commission for the Granting of Fiscal Benefits to Special Export Programs (BEFIEX) allows Brazilian exporters, in exchange for export commitments, to take advantage of several types of benefits, such as import duty reductions and accelerated depreciation for machinery used in the production of exports. Because this program provides tax reductions that are limited to exporters, we preliminarily determine that this program is countervailable. Brazilian Law 8.032 of April 12, 1990, eliminated this program for new projects. However, the Department has determined that residual benefits may continue due to outstanding BEFIEX contracts.

Four cotton yarn exporters received import duty tax reductions and two of these cotton yarn exporters also received merchant marine freight tax reductions by virtue of their BEFIEX contracts during the review period.

To calculate the benefit, we divided the amount of each firm's import duty reductions and merchant marine tax exemptions received in 1992 by that firm's total exports in 1992. We then weight-averaged the benefits by each

respondent's share of exports of the subject merchandise to the United States. On this basis, we preliminarily determine the benefit to be 0.30 percent *ad valorem* for all firms.

(2) Terminated Programs With No Residual Benefits During the Period of Review

a. Income Tax Reduction for Export Earnings

This program was terminated effective April 12, 1990, by Decree Law 8034 which established a uniform tax rate of 30 percent for domestic and export earnings beginning with tax year 1990. Since the last tax returns on which these benefits could be claimed were filed in 1991, there are no residual benefits from this program. (See Cotton Yarn From Brazil; Preliminary Results of Countervailing Duty Administrative Review, (56 FR 47456) and Cotton Yarn From Brazil; Final Results of Countervailing Duty Administrative Review, (57 FR 1454).)

b. CACEX (Carteira de Comercio Exterior) Preferential Working Capital Financing for Exports

This program was terminated effective August 30, 1990, by Central Bank Resolution 1744. In accordance with Resolution 1744, there are no residual benefits from this program since all non-used portions of financing were cancelled when the program was eliminated. At verification, we saw no evidence of this financing at the companies.

c. IPI (Tax on Industrialized Products) for Imports of Machinery or Equipment Under Decree Law 2324

This program was terminated effective December 28, 1989, by Decree-Law 7988. Companies could benefit from the tax exemption until December 31, 1990, and no residual benefits were provided after this date. At verification, we saw no evidence of IPI tax exemptions under Law 2324 at the companies.

(3) Programs Not Used

We also examined the following programs and preliminarily determine that the respondents did not use them during the review period:

A. SUDENE Corporate Income Tax Reduction for Companies Located in the Northeast of Brazil.

B. Preferential Export Financing under CIC-OPCRE of the Banco do Brasil.

C. Preferential Financing for Industrial Enterprises by the Banco do Brasil (FST and EGF loans).

Verification

As required under 19 CFR 355.36(a)(1)(iv)(B) of the Department's regulations, we verified Brazilian cotton yarn exporters because no verification had been conducted in either of the two immediately preceeding administrative reviews. We selected several companies for verification of both programs that were used and programs that were not used. When conducting verification of Brazilian customs information, we found that Brazilian officials had inadvertently reported export information for shipments of non-subject merchandise, combed cotton yarn, to the United States. According to Brazilian government records, CBF, a company originally included in this review, had no shipments of the subject merchandise to the United States during the review period. At the company, we examined company records and found no evidence of shipments of the subject merchandise to the United States during the review period.

Preliminary Results of Review

As a result of our review, we preliminarily determine the net subsidy to be 0.30 percent *ad valorem* for all firms for the period January 1, 1992 through December 31, 1992. In accordance with 19 CFR 355.7, any rate less than 0.5 percent *ad valorem* is *de minimis*.

Therefore, in accordance with section 706(a)(1) of the Act (19 U.S.C. 1671e(a)(1)), the Department intends to instruct the Customs Service to liquidate, upon publication of the final results of this review in the **Federal Register**, without regard to countervailing duties, all shipments of the subject merchandise from Brazil exported on or after January 1, 1992, and on or before December 31, 1992.

The Department also intends to instruct the Customs Service not to collect cash deposits of estimated countervailing duties on any shipments of this merchandise from Brazil entered or withdrawn from warehouse, for consumption on or after the date of publication of the final results of this administrative review.

Parties to the proceeding may request disclosure of the calculation methodology and interested parties may request a hearing not later than 10 days after the date of publication of this notice. Interested parties may submit written arguments in case briefs on these preliminary results within 30 days of the date of publication. Rebuttal briefs, limited to arguments raised in case briefs, may be submitted seven days after the time limit for filing the case brief. Any hearing, if requested, will be held within seven days after the scheduled date for submission of rebuttal briefs. Copies of case briefs and rebuttal briefs must be served on interested parties in accordance with 19 CFR 355.38(e). Representatives of parties to the proceeding may request disclosure of proprietary information under administrative protective order no later than 10 days after the representative's client or employer becomes a party to the proceeding, but in no event later than the date the case briefs, under § 355.38(c), are due. The Department will publish the final results of this administrative review including the results of its analysis of issues raised in any case or rebuttal brief.

This administrative review and notice are in accordance with section 751(a)(1) of the Act (19 U.S.C. 1675(a)(1)) and 19 CFR 355.22.

Dated: December 23, 1993.

Barbara R. Stafford,

Acting Assistant Secretary for Import Administration.

[FR Doc. 93–32072 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

National Oceanic and Atmospheric Administration

[I.D. 102693A]

Notice of Availability for Loan of Fish and Wildlife Items

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of availability.

SUMMARY: This notice lists fish and wildlife items that have been abandoned or forfeited to the United States and are available for loan to qualified institutions, organizations, and individuals through each NOAA Regional Enforcement Office. The notice also describes the qualifications necessary to obtain loan of an item, the means of applying for a loan, and the general conditions under which a loan will be made.

ADDRESSES: For availability of items currently available, see Regional Enforcement Office addresses under supplementary information.

FOR FURTHER INFORMATION CONTACT: Special Agent Alan Mager (Office of Enforcement) (301) 427–2010 x110.

SUPPLEMENTARY INFORMATION: Under the Fish and Wildlife Improvement Act of 1978, (16 U.S.C. 7421), NOAA may make loans of fish and wildlife items

that have been seized and subsequently abandoned or forfeited to the United States Regulations appearing at 15 CFR part 904, subpart F, govern the conditions under which loans of items are made and the procedures for making loans. Items available for loan are most commonly seized under the Marine Mammal Protection Act (16 U.S.C. 1361–1404) and the Endangered Species Act (16 U.S.C. 1531–1543). Loans will be made for educational, scientific, and public display purposes.

All such loans will be made through loan agreements, which will provide, among other things, that title to the items remain with the United States, that the items may not be transferred without permission of NOAA, and that violation of a loan agreement may subject the violator to penalties under the applicable statute. In order to qualify for a loan, an applicant must intend to use the item only for non-commercial scientific, educational, or public display purposes and demonstrate the ability to provide adequate security for the item.

Loan recipients will be selected so as to ensure wide distribution through the scientific, educational, public display, and museum communities. Priority in granting application will be given in the following order: NOAA and other Government agencies; educational, scientific, or other public or private institutions; and private individuals.

Those interested in applying for a loan of an item should apply at the Regional Enforcement Office where the item is available, as listed below. In order to give those interested adequate opportunity to apply, no loan will be executed for 45 days from the date of this publication. Update lists will be published periodically.

A list of items currently available at each Enforcement Office follows.

Northeast Region

Apply to: Mr. John McCarthy, MNFS Law Enforcement Regional Office, 1 Blackburn Drive, room 206, Gloucester, MA 01930, (508) 281–9213.

Control # Description

NE7513004A SPERM WHALE TEETH, RAW
NE761082A (3) SEALSKIN COATS, FULL LENGTH
NE761082A (1) SEALSKIN COAT, JACKET
NE771007A (1) SEALSKIN COAT
NE771071A (1) SEALSKIN PARKA, SIZE 8
NE781108A (1) SEALSKIN COAT
NE791007A (2) SEALSKIN PELTS
NE801067A (1) SEA LION COAT
NE811010A (1) SEALSKIN COAT
NE811011A (1) SEALSKIN COAT
NE811013A (1) SEALSKIN COAT
NE811022A (1) SEALSKIN JACKET
NE841008A SPERM WHALE TEETH, CLEANED
NE841010A (1) BLACK FUR SEAL COAT
NE871001A (1) SEALSKIN COAT
NE871011A (3) SEALSKIN DOLLS
NE871012A (2) SEALSKIN COATS
NE871014A (1) SEALSKIN PURSE
NE871029A (1) SEALSKIN TOY
NE871030A (3) SEALSKIN COATS
NE881025A (3) SEALSKIN MINIATURES
NE881034A (1) SEALSKIN KEY CHAIN
NE881035A (1) SEALSKIN TOY
NE881036A (1) SEALSKIN SEAL SOUVENIR
NE881037A (1) SEALSKIN JACKET
NE881039A (2) SEALSKIN DOLLS
NE881040A (1) SEALSKIN TOY DOLL
NE881041A (1) SEALSKIN KEY CHAIN
NE881043A (2) SEALSKIN DOLLS
NE881044A (1) SEALSKIN COAT, BLACK
NE881051A (1) SEALSKIN DOLL
NE881052A (1) SEALSKIN DOLL
NE881052A (1) SEALSKIN DOLL
NE881052A (1) PAIR SEALSKIN BOOTIES
NE881054A (4) SEALSKIN KEY CHAINS
NE891001A (1) SEALSKIN MINIATURE
NE891003A (1) SEALSKIN KEY CHAIN
NE891004A (1) SEALSKIN DOLL
NE891005A (5) SEALSKIN DOLLS
NE891006A (2) SEALSKIN DOLLS
NE891007A (1) SEALSKIN DOLL
NE891008A (1) SEALSKIN KEY CHAIN
NE891008A (1) SEALSKIN DOLL
NE891010A (1) SEALSKIN TOY
NE891011A (1) SEALSKIN DOLL
NE891016A (1) SEALSKIN DOLL
NE891023A (2) PAIRS SEALSKIN BOOTS
NE891026A (1) SEALSKIN DOLL
NE891028A (1) PAIRS SEALSKIN SLIPPERS
NE891032A (3) SEALSKIN MINIATURES
NE901002A (1) SEALSKIN HAT
NE901010A (4) SEALSKIN MINIATURES
NE901011A (2) SEALSKIN MINIATURES
NE901017A (2) SEALSKIN MINIATURES
NE901023A (1) SEALSKIN PURSE
NE901025A (1) PAIR SEALSKIN BOOTS, MINIATIRE
NE901025A (1) SEALSKIN DOLL
NE901026A (1) SEALSKIN MINIATURE
NE901027A (1) SEALSKIN MINIATURE
NE901028A (1) SEALSKIN MINIATURE
NE901029A (1) SEALSKIN KEY RING
NE901030A (1) SEALSKIN MINIATURE
NE901031A (1) SEALSKIN MINIATURE
NE901032A (2) SEALSKIN CHANGE PURSES
NE901033A (1) SEALSKIN MINIATURE
NE901034A (2) SEALSKIN SCRAPS
NE901035A (2) SEALSKIN CHANGE PURSES
NE901036A (1) SEALSKIN KEY RING
NE901037A (1) SEALSKIN MINIATURE
NE901039A (1) SEALSKIN KEY RING
NE901040A (2) SEALSKIN MINIATURES
NE901041A (1) SEALSKIN MINIATURE
NE901042A (2) SEALSKIN MINIATURES
NE901043A (1) SEALSKIN MINIATURE
NE901047A (1) SEALSKIN MINIATURE
NE901048A (1) SEALSKIN PURSE
NE901049A (1) SEALSKIN MINIATURE
NE901050A (3) SEALSKIN MINIATURES
NE901052A (1) SEALSKIN MINIATURE
NE901053A (1) SEALSKIN MINIATURE
NE901054A (5) SEALSKIN KEY RINGS
NE901055A (1) SEALSKIN MINIATURE
NE901056A (6) SEALSKIN CHANGES PURSES
NE901062A (5) SEALSKIN CHANGE PURSES W/KEY RINGS
NE901062A (2) SEALSKIN PURSES
NE901062A (5) SEALSKIN CHANGE PURSES
NE901063A (1) SEALSKIN CHANGE PURSE
NE901064A (1) SEALSKIN MINIATURE
NE901065A (1) SEALSKIN MINIATURE
NE901066A (1) SEALSKIN KEY CHAIN
NE901067A (1) SEALSKIN ANIMAL
NE901068A (1) SEALSKIN PURSE
NE901069A (1) SEALSKIN MINIATURE
NE901070A (1) SEALSKIN ANIMAL
NE901071A (1) SEALSKIN ANIMAL
NE901072A (1) SEALSKIN CHANGE PURSE W/MINIATURE
NE901073A (3) SEALSKIN CHANGE PURSES W/MINIATURES
NE901073A (1) SEALSKIN PURSE

NE901074A (2) SEALSKIN ANIMALS W/MINIATURES
NE901075A (1) SEALSKIN MINIATURE
NE901076A (2) SEALSKIN MINIATURES
NE901077A (1) SEALSKIN CHANGE PURSE
NE901078A (1) SEALSKIN MINIATURE
NE901079A (1) SEALSKIN ANIMAL
NE901080A (1) SEALSKIN KEY CHAIN
NE901081A (1) SEALSKIN MINIATURE
NE901082A (2) SEALSKIN KEY CHAINS
NE901083A (1) SEALSKIN KEY CHAIN
NE901084A (1) SEALSKIN ANIMAL
NE901086A (1) SEALSKIN ANIMAL
NE901087A (2) SEALSKIN MINIATURES
NE901088A (1) SEALSKIN MINIATURE
NE901089A (1) SEALSKIN MINIATURE
NE911006A (1) SEALSKIN KEY CHAIN
NE911007A (2) SEALSKIN MINIATURES
NE911008A (3) SEALSKIN MINIATURES
NE911009A (1) SEALSKIN TOY
NE911010A (1) SEALSKIN TOY
NE911011A (1) SEALSKIN TOY
NE911012A (1) SEALSKIN TOY
NE911013A (1) SEALSKIN TOY
NE911014A (1) SEALSKIN MINIATURE
NE911015A (1) SEALSKIN MINIATURE
NE911016A (36) SEALSKIN KEY CHAINS/(2) SEALSKIN MINIATURES
NE911017A (1) DESK DISPLAY W/(2) SEAL, MOUNTED
NE911020A (2) WHALE BALEEN/(4) WHALE BONE, VERTEBRAE
NE911023A (1) SEALSKIN MINIATURE
NE911026A (1) SEALSKIN JACKET
NE911027A (1) DESK DISPLAY W/(2) SEALS, MOUNTED
NE911029A (2) CANS SEAL MEAT
NE911030A (3) SEALSKIN TOYS/(1) SEALSKIN MINIATURE
NE911040A (2) SEALSKIN TOYS W/ (2) MINIATURES
NE911041A (1) DESK DISPLAY W/(3) SEALS MOUNTED
NE911043A (1) CAN SEAL MEAT
NE911045A (1) SEALSKIN TOY W/(2) MINIATURES
NE911046A (1) PAIR SEALSKIN GLOVES, MINIATURE
NE911052A (2) BLACK LEATHER JACKETS W/SEALSKIN TRIM
NE911053A (1) SEALSKIN TOY W/(1) SEALSKIN MINIATURE
NE911054A (2) SEALSKIN TOYS
NE921006A (1) DESK DISPLAY W/(2) SEALS, MOUNTED
NE921011A (1) SEALSKIN MINIATURE

Northwest Region

Apply to: Mr. Wayne C. Lewis, NMFS Law Enforcement Regional Office, 7600 and Point Way NE., C15700, Seattle, WA 98115, (206) 526–6133.

Control # Description

NW910018 (1) SEALSKIN PURSE
NW910019 (1) PAIR OF SEALSKIM ALASKAN YO-YOS
NW910053 (1) PAIR SEALSKIN SLIPPERS
NW911220 (1) SEALSKIN JACKET
NW911245 (1) SMALL SEALSKIN PURSE
NW911524 (1) SEALSKIN TOY
NW911525 (1) STUFFED HARP SEAL

Southwest Region

Apply to: Mr. Gene Proulx, NMFS Law Enforcement Regional Officer, 501 W Ocean Blvd. Suite 4400A, Long Beach, CA 90802–4213, (310) 980–4050.

Control # Description

SW750011A (1) CARVED SPERM WHALE TOOTH
SW750015A (25) RAW SPERM WHALE TEETH
SW750020A (1) SPERM WHALE TOOTH WITH CARVED LION
SW750026A (2) SPERM WHALE TOOTH PENDANTS
SW760006A (2) CARVED WHALE TEETH
SW760021A (1) SPERM WHALE TOOTH
SW760026A (1) SPERM WHALE TOOTH
SW760033A (100) POLISHED SPERM WHALE TEETH
SW761004A (6) SPERM WHALE TEETH
SW761008A (26) SPERM WHALE TEETH
SW761025A (1) SPERM WHALE TOOTH
SW770001A (9) WHALE TEETH PENDANTS, (2) RINGS
SW770001A (1) SCRIMSHAW WHALE TOOTH PENDANT
SW770010A (80) PIECES SCRIMSHAW WHALE IVORY
SW770010A (7) ASSORTED PIECES OF IVORY
SW770015A (1) WHALE TOOTH
SW770030A (1) SCRIMSHAWED TOOTH
SW771001A (1) PLASTIC CARVED LION & STAND
SW771037A (6) RAW SPERM WHALE TEETH
SW780002A (30) ASSORTED WHALE IVORY CARVINGS
SW780027A (2) SPERM WHALE TOOTHBIRD CARVING
SW780031A (40) WHALE TOOTH PENDANTS
SW780068A (1) SEALSKIN COAT
SW780071A (1) WHALE BONE PENDANT
SW780096A (51) SEALSKIN TOYS
SW780096A (3) SEALSKIN TOYS
SW781009A (1) SCRIMSHAWED SPERM WHALE TOOTH
SW781017A (3) SCRIMSHAW WHALE TEETH
SW781026A (3) TEETH (1 POLISHED) (2 SCRIMSHAWED)
SW790020A (2) SPERM WHALE TEETH (7 IN.)
SW790059A (46) BALEEN TONGUE SCRAPERS
SW790081A (21) SPERM WHALE TEETH PENDANT JEWELRY
SW790085A (6) SPERM WHALE TEETH (3 WORKED, 3 UNWORKED)
SW790170A (7) SPERM WHALE TEETH
SW790184A (2) RAW SPERM WHALE TEETH
SW790185A (1) TAN CARRYING CASE
SW790185A (27) WOOD BOXES, (24) SCRIM TEETH, (1) POLISHED TOOTH
SW790185A (10) WHALE TEETH, (3) WHALE BONES
SW790185A (3) SCRIMSHAWED WHALE TEETH
SW790198A (3) RAW SPERM WHALE TEETH
SW790200A (3) PIECES SPERM WHALEPENDANTS
SW790206A (1) CARVED SPERM WHALETOOTH
SW790217A (1) HAWKSBILL TURTLE (STUFFED)
SW800023A (1) WHALE BONE PENDANT
SW800041A (2) SPERM WHALE TEETH ON STANDS
SW800046A (9) SPERM WHALE TEETH
SW800047A (1) SPERM WHALE TOOTH
SW800063A (2) SCRIMSHAWED & SPERM WHALE TEETH
SW800085A (1) TANNED SEAL SKIN
SW800093A (1) IVORY PENDANT
SW800099A (1) WHALE TOOTH PENDANT
SW800102A (2) SPERM WHALE CARVINGS, (1) WHALE TOOTH
SW800123A (1) SCRIMSHAWED TOOTH
SW800128A (1) IVORY PENDANT
SW810019A (2) RAW SPERM WHALE TEETH, PENDANT
SW810085A (1) HAWKSBILL SEA TURTLE
SW810089A (3) HAWKSBILL TURTLES

SW810089A (2) GREEN SEA TURTLES
SW810092A (1) GREEN SEA TURTLE
SW810094A (1) GREEN SEA TURTLE
SW810094A (2) HAWKSBILL TURTLES
SW810095A (1) HAWKSBILL TURTLE
SW810097A (1) HAWKSBILL SEA TURTLE
SW810098A (2) HAWKSBILL TURTLES
SW820037A (1) POLISHED SPERM WHALE TOOTH
SW820096A (1) RAW SPERM WHALE TOOTH
SW820156A (3) RAW SPERM WHALE TEETH
SW830123A (7) PCS TURTLE JEWELRY
SW840005A (1) RAW SPERM WHALE TOOTH
SW850020A (6) WHALE TEETH, (2) CARVINGS
SW860046A (2) CANS WHALE MEAT
SW860226A (7) SPERM WHALE TEETH (SCRIMSHAW)
SW860245A (7) SCRIMSHAWED SPERM WHALE TEETH
SW860246A (1) SCRIMSHAW PENDANT AND TOOTH
SW860302A (1) WHALE TOOTH
SW860327A (16) HAWKSBILL TURTLE SHELL TRAYS
SW860355A (1) ETCHED WHALE BONE PENDANT
SW860361A (4) WHALE TEETH
SW860395A (55) SPERM WHALE IVORYNETSUKES
SW860395A (1) SCRIMSHAW SPERM WHALE TOOTH
SW870006A (85) SPERM WHALE IVORYNETSUKES
SW870007A (66) SPERM WHALE IVORYNETSUKES
SW870224A (2) WHALE TEETH SCRIMSHAW
SW870449A BRASS COPPER NAILS
SW870601A (12) BRACELETS, (4) RINGS, (1) STORYBOARD, (1) HAIR CLIP, (2) EARRINGS
SW880045A (1) TRAY, (TOLUK)
SW880119A (3) SCRIMSHAW SPERM WHALE TEETH
SW880170A (1) TRAY HAWKSBILL TURTLE SHELL
SW880198A (3) TRAYS HAWKSBILL TURTLE SHELL
SW880200A (1) FUR SEAL COAT
SW880317A (1) SCRIMSHAWED SPERM WHALE TOOTH
SW880360A (1) TANNED SEAL SKIN
SW890424A (5) SPERM WHALE BONE CARVINGS
SW890430A (1) CARVED EAGLE HEAD SPERM WHALE TOOTH
SW900011A WHALE TEETH (SCRIMSHAWED) #9492 2 US
SW900063A (1) SPERM WHALE TOOTH
SW900451A (3) HAWKSHELL SEA TURTLE SHELL "TOLUK" TRAYS
SW910034A (1) SPERM WHALE TOOTH (SCRIMSHAW)

Alaska Region

Apply to: Mr. David Flannagan, NMFS Law Enforcement Regional Office, P.O. Box 21668, Juneau, AK 99802–1668, (907) 586–7225.

Control # Description

AK800113A (1) HARBOR SEAL HEAD
AK810051A (1) PAIR SEALSKIN MUKLUKS
AK820064A (36) KILLER WHALE TEETH
AK820064A (6) KILLER WHALE TEETH
AK820135A (1) WALRUS TUSK
AK830003A (1) FUR COAT WITH SEAL SKIN SECTION
AK830060A (1.5) SEAL HIDES
AK830085A (1) SEA LION HIDE
AK830085A ASSORTED PIECES OF SEA LION HIDE AND MEAT
AK830231A (1) TANNED SEAL SKIN
AK830243A (1) UNTANNED HARBOR SEAL SKIN
AK830296A (1) BALEEN FROND, 12 INCHES
AK840173A (2) SEAL HIDES
AK840262A (1) FROND OF BOWHEAD BALEEN
AK840318A (4) VERTEBRAE AND (1) RIB FROM GREY WHALE
AK850018A (1) UNTANNED SEAL SKIN
AK850244A (2) SEAL SKINS
AK850250A (1) WHALE RIB
AK850289A (3) PIECES OF BALEEN
AK850300A (1) SCRIMSHAWED WHALE TOOTH
AK860042A (1) WHALE VERTEBRA
AK860060A (2) BALEEN WHALE VERTEBRAE
AK860072A (1) SEAL SKIN PARKA
AK860073A (1) SEAL SKIN VEST
AK860171A (1) GREY WHALE RIB BONE AND VERTEBRAE
AK860227A (2) SEAL SKIN VESTS
AK860262A (1) SEAL SKIN AND LEATHER VEST
AK860267A (2) VERTEBRAE AND (2) RIBS FROM HUMPBACK WHALE
AK870034A (1) WHALE VERTEBRA
AK870053A (1) PAIR SEAL SKIN BOOTS
AK870060A (1) WHALE BONE
AK870085A (2) HAND PUPPERTS WITH SEAL SKIN MITTENS
AK870201C (2) TOTEMIC KILLER WHALES
AK870201D (1) TOTEMIC WHALE
AK880010A (1) KILLER WHALE TOOTH
AK880092A (1) STUFFED BABY SEAL SKIN
AK880168A (2) WALRUS TUSKS
AK880186A (1) SEAL SKIN WALLET
AK880187A (1) PURSE MADE PARTLY OF SEAL SKIN
AK880297A (2) LARGE PIECES OF GREY WHALE BALEEN
AK880360A (1) BALEEN FROND
AK890038A (5) SEAL SKIN WALLETS
AK890070A (1) PILLOW/(2) PAINTINGS/ (1) PLAQUE/ (2) PURSES/ (1) PAIR GLOVES
AK890070A (1) WALRUS TOOTH/ (5) BALEEN ART PIECES
AK890308A (4) WHALE BONES
AK890308A (1) SEAL SKIN COIN PURSE
AK890308A (3) SEAL SKIN PILLOWS
AK890308A (1) SEAL SKIN HANDBAG
AK890308A (3) PAIR SEAL SKIN SLIPPERS
AK890308A (1) SEAL SKIN EYEGLASS CASE
AK890308A (1) SEAL SKIN ORNAMENT
AK890308A (1) SEAL SKIN DOLL
AK900062A (8) BALEEN PLATES (5–10 FEET LONG)
AK900068A (1) GRAY WHALE RIB BONE/1 GRAY WHALE JAW BONE
AK900181A (1) PAIR SEAL SKIN MUKLUKS/(2) PIECES SEAL SKIN SCRAPS
AK900498A (6) WHALE VERTEBRAE/ (3) WHALE RIBS
AK900540A (3) WHALE RIB BONE/(1) VERTEBRAE
AK900542A (3) WALE VERTEBRAE/ (1) ADULT WALRUS SKULL
AK910193A (1) HANDICRAFT ITEM MADE FROM SEAL SKIN
AK910194A ADULT AND MINIATURE SEAL HIDE SLIPPERS/IVORY TRINKET
AK910210A (1) SEA LION TOOTH/(2) SMALL WALRUS TEETH
AK910240A (1) CLUTCH PURSE MADE FROM SEAL HIDE
AK910294A WOODEN CARVING AND PURSE MADE FROM SEAL HIDE
AK910295A (1) WHALE BONE CARVING
AK910295A (1) NECKLACE MADE FROM SEAL HIDE
AK910296A (1) PURSE MADE FROM SEAL HIDE
AK910297A (1) PURSE MADE FROM SEAL HIDE
AK910298A (1) HANDBAG MADE FROM SEAL HIDE
AK910299A (1) PIN MADE FROM SEAL SKIN
AK910300A (1) TASSEL MADE FROM SEAL HIDE
AK910302A (1) PURSE MADE FROM SEAL HIDE
AK910303A (1) NECKLACE MADE FROM SEAL HIDE
AK911099A (1) DOLL MADE WITH SEAL SKIN

AK911100A (1) LEATHER BAG MADE FROM MARINE MAMMAL PRODUCTS
AK911291A (7) DOLLS MADE OF SEAL SKIN
AK911322A (1) PAIR SEAL SKIN BOOTS/(1) SEAL SKIN HAT
AK911324A (2) SEAL HIDE WALL HANGINGS/ (8) SEAL HIDE DOLLS
AK920022A (2) WHALE VERTEBRAE
AK920175A (2) WHALE RIBS AND (5) VERTEBRAE
AK920254A (1) SEAL HIDE PICTURE
AK920256A SEAL HIDE SLIPPERS
AK920257A (3) PAIR SEAL HIDE SLIPPERS
AK920258A (2) SEAL HIDE WALLETS
AK920259A (1) SEAL HIDE PURSE
AK920260A (2) SEAL HIDE AND BALEEN PLAQUES
AK920261A (12) SEAL HIDE PIECES
AK920262A (1) SEAL HIDE HANGING
AK920263A (1) SEAL HIDE PIN CUSHION
AK920264A (2) SEAL HIDE SLIPPERS
AK920265A SEAL HIDE PLAQUE
AK920266A (2) SEAL HIDE NECKLACES/ (2) BROOCHES/(2) WALLETS
AK920268A SEAL HIDE WALLET
AK920321A SEAL HIDE PURSE
AK920322A (1) SEAL HIDE PLAQUE
AK920324A (1) SEAL HIDE PLAQUE
AK920325A SEAL HIDE PLAQUE
AK920326A HERBAL REMEDY MADE IN PART OF SEAL
AK920327A (3) SEAL HIDE PLAQUES
AK920328A (1) PAIR SEAL HIDE SLIPPERS
AK920459A GREAT WHALE PARTS (1 SHOULDER BLADE, 2 RIBS, 1 VERTEBRAE)
AK920478A (3) SEAL HIDE DOLLS
AK920479A SEAL HIDE
AK920480A SEAL HIDE PLAQUE
AK920481A SEAL HIDE WALL HANGING
AK920482A (2) SEAL HIDE WALL HANGINGS
AK920485A SEAL HIDE PLAQUE
AK920486A SEAL HIDE PLAQUE
AK920644A (1) STELLAR SEA LION SKULL (3 PIECES)
AK920665A SEAL HIDE WALL HANGING
AK920666A SEAL HIDE WALL HANGING
AK920667A (1) WHALE SCAPULA, (4) WHALE VERTEBRAE
AK920672A (2) SEAL HIDE DOLLS

Classification

Because this notice involves the disposition of public property, the Assistant Administrator for Fisheries, NOAA, has determined that this notice is not a rule subject to 5 U.S.C. 553.

Dated: December 19, 1993.

Rolland A. Schmitten,

Assistant Administrator for Fisheries.

[FR Doc. 93–31997 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–22–M

Technology Administration

National Medal of Technology Nomination Evaluation Committee; Meeting

AGENCY: Technology Administration, Commerce.

ACTION: Notice of closed meeting.

SUMMARY: This notice announces the forthcoming closed meeting of the National Medal of Technology Nomination Evaluation Committee. The Committee was rechartered on September 15, 1993.

The Committee shall make recommendations to the Secretary of Commerce, through a Steering Committee, concerning award of the National Medal of Technology.

The Committee will meet only in executive session to discuss matters concerned with applying the criteria for determining the relative merits of all persons and companies nominated for the Medal as a result of a public solicitation.

TIME AND PLACE: The meeting will begin at 10 a.m. and end at 3:30 p.m. on January 21, 1994. The meeting will be held in room 4830 at the U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230.

FOR FURTHER INFORMATION CONTACT: Dr. Paul Braden, Manager, National Medal of Technology Nomination Evaluation Committee, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Herbert C. Hoover Building, room 4418, Washington, DC 20230, (202) 482–5572.

SUPPLEMENTARY INFORMATION: A Notice of Determination to close the meetings of the Committee to the public on the basis of Section 10(d) of the Federal Advisory Committee Act, 5 U.S.C. app. 2, as amended, section 552b(c)(9)(B) of title 5, United States Code was approved by the Chief Financial Officer and Assistant Secretary for Administration, with the concurrence of the General Counsel on (December 22, 1993), in accordance with the Federal Advisory Committee Act, since premature publicity about candidates under consideration for the Medal, who may or may not ultimately receive the award, would be likely to discourage nominations for the Medal. This would be likely to significantly frustrate implementation of a proposed agency action. A copy of the Notice of Determination is available for public inspection and copying in the Central Reference and Records Inspection Facility, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Herbert C. Hoover Building, room 6628, Washington, DC 20230. (202) 482–4120.

Dated: December 23, 1993.

Gary Bachula,

Deputy Under Secretary for Technology.

[FR Doc. 93–32023 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–18–M

COMMITTEE FOR PURCHASE FROM PEOPLE WHO ARE BLIND OR SEVERELY DISABLED

Procurement List; Proposed Additions

AGENCY: Committee for Purchase From People Who Are Blind or Severely Disabled.

ACTION: Proposed Additions to Procurement List.

SUMMARY: The Committee has received proposals to add to the Procurement List commodities to be furnished by nonprofit agencies employing persons who are blind or have other severe disabilities.

COMMENTS MUST BE RECEIVED ON OR BEFORE: February 2, 1994.

ADDRESSES: Committee for Purchase From People Who Are Blind or Severely Disabled, Crystal Square 3, Suite 403, 1735 Jefferson Davis Highway, Arlington, Virginia 22202–3461.

FOR FURTHER INFORMATION CONTACT: Beverly Milkman (703) 603–7740.

SUPPLEMENTARY INFORMATION: This notice is published pursuant to 41 U.S.C. 47(a)(2) and 41 CFR 51–2.3. Its purpose is to provide interested persons an opportunity to submit comments on the possible impact of the proposed actions.

If the Committee approves the proposed additions, all entities of the Federal Government (except as otherwise indicated) will be required to procure the commodities listed below from nonprofit agencies employing persons who are blind or have other severe disabilities.

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. The action will not result in any additional reporting, recordkeeping or other compliance requirements for small entities other than the small

organizations that will furnish the commodities to the Government.

2. The action does not appear to have a severe economic impact on the current contractors for the commodities.

3. The action will result in authorizing small entities to furnish the commodities to the Government.

4. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the commodities proposed for addition to the Procurement List.

Comments on this certification are invited. Commenters should identify the statement(s) underlying the certification on which they are providing additional information.

It is proposed to add the following commodities to the Procurement List for production by the nonprofit agency listed:

Pallet, Wood
3990–00–NSH–0072
(Requirements for Federal Prison Industries, Washington, DC)
Nonprofit Agency: Handi-Shop Industries, Inc., Tomah, Washington.

Cabinet, Tool, Mobile
5140–00–030–6617
5140–00–870–4796
5140–01–010–4775
5140–01–010–4776
Nonprofit Agency: Custom Manufacturing Services, Inc., Louisville, Kentucky.

Tool Box, Portable
5140–00–319–5079
5140–00–494–2015
Nonprofit Agency: Custom Manufacturing Services, Inc., Louisville, Kentucky.

Beverly L. Milkman,
Executive Director.

[FR Doc. 93–32080 Filed 12–30–93; 8:45 am]

BILLING CODE 6820–33–P

Procurement List; Proposed Additions

AGENCY: Committee for Purchase From People Who Are Blind or Severely Disabled.

ACTION: Proposed Additions to Procurement List.

SUMMARY: The Committee has received a proposal to add to the Procurement List commodities to be furnished by nonprofit agencies employing persons who are blind or have other severe disabilities.

COMMENTS MUST BE RECEIVED ON OR BEFORE: February 2, 1994.

ADDRESS: Committee for Purchase From People Who Are Blind or Severely Disabled, Crystal Square 3, suite 403, 1735 Jefferson Davis Highway, Arlington, Virginia 22202–3461.

FOR FURTHER INFORMATION CONTACT: Beverly Milkman (703) 603–7740.

SUPPLEMENTARY INFORMATION: This notice is published pursuant to 41 U.S.C. 47(a)(2) and 41 CFR 51–2.3. Its purpose is to provide interested persons an opportunity to submit comments on the possible impact of the proposed action.

If the Committee approves the proposed addition, all entities of the Federal Government (except as otherwise indicated) will be required to procure the commodities listed below from nonprofit agencies employing persons who are blind or have other severe disabilities.

I certify that the following actions will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. The action will not result in any additional reporting, recordkeeping or other compliance requirements for small entities other than the small organizations that will furnish the commodities to the Government.

2. The action will result in authorizing small entities to furnish the commodities to the Government.

3. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the commodities proposed for addition to the Procurement List.

Comments on this certification are invited. Commenters should identify the statement(s) underlying the certification on which they are providing additional information.

The following commodities have been proposed for addition to the Procurement List for production by the nonprofit agency listed:

Coveralls, Safety
8415–00–939–7879
8415–00–939–7880
8415–00–939–7881
8415–00–939–7882
8415–00–926–5113
Nonprofit Agency: Human Technologies Corporation, Utica, New York.

Beverly L. Milkman,
Executive Director.

[FR Doc. 93–32079 Filed 12–30–93; 8:45 am]

BILLING CODE 6820–33–P

Procurement List; Additions

AGENCY: Committee for Purchase from People Who Are Blind or Severely Disabled.

ACTION: Additions to Procurement List.

SUMMARY: This action adds to the Procurement List commodities and services to be furnished by nonprofit agencies employing persons who are blind or have other severe disabilities.

EFFECTIVE DATE: February 2, 1994.

ADDRESSES: Committee for Purchase from People Who Are Blind or Severely Disabled, Crystal Square 3, Suite 403, 1735 Jefferson Davis Highway, Arlington, Virginia 22202–3461.

FOR FURTHER INFORMATION CONTACT: Beverly Milkman (703) 603–7740.

SUPPLEMENTARY INFORMATION: On October 29 and November 5, 1993, the Committee for Purchase from People Who Are Blind or Severely Disabled published notices (58 F.R. 58156 and 39013) of proposed additions to the Procurement List.

After consideration of the material presented to it concerning capability of qualified nonprofit agencies to provide the commodities and services, fair market price, and impact of the additions on the current or most recent contractors, the Committee has determined that the commodities and services listed below are suitable for procurement by the Federal Government under 41 U.S.C. 46–48c and 41 CFR 51–2.4.

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. The action will not result in any additional reporting, recordkeeping or other compliance requirements for small entities other than the small organizations that will furnish the commodities and services to the Government.

2. The action will not have a severe economic impact on current contractors for the commodities and services.

3. The action will result in authorizing small entities to furnish the commodities and services to the Government.

4. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the commodities and services proposed for addition to the Procurement List.

Accordingly, the following commodities and services are hereby added to the Procurement List:

Commodities

Poly Bag, White
8105–LL–S04–9869
8105–LL–S04–8762

(Requirements for the Fleet and Industrial Supply Center, Bremerton, Washington)

Services

Administrative Service, Federal Highway Administration, 610 East 5th Street, Vancouver, Washington

Janitorial/Custodial, Building 1028, Kirtland Air Force Base, New Mexico

This action does not affect current contracts awarded prior to the effective date of this addition or options exercised under those contracts.

Beverly L. Milkman,

Executive Director.

[FR Doc. 93–32078 Filed 12–30–93; 8:45 am]

BILLING CODE 6820–33–P

DEPARTMENT OF DEFENSE

Office of the Secretary

Defense Science Board Task Force on Defense Laboratory Management

ACTION: Notice of Advisory Committee Meetings.

SUMMARY: The Defense Science Board Task Force on Defense Laboratory Management will meet in closed session on January 19–20, January 28, and February 24, 1994 at the Pentagon, Arlington, Virginia.

The mission of the Defense Science Board is to advise the Secretary of Defense through the Under Secretary of Defense for Acquisition and Technology on scientific and technical matters as they affect the perceived needs of the Department of Defense. At these meetings the Task Force will develop a strategy for restructuring and substantially reducing the size of the defense laboratory infrastructure while simultaneously maintaining its generic capabilities and improving product quality.

In accordance with section 10(d) of the Federal Advisory Committee Act, Public Law 92–463, as amended (5 U.S.C. App. II, (1988)), it has been determined that these DSB Task Force meetings, concern matters listed in 5 U.S.C. 552b(c)(1) (1988), and that accordingly these meetings will be closed to the public.

Dated: December 27, 1993.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 93–32001 Filed 12–30–93; 8:45 am]

BILLING CODE 5000–04–Mz

Department of the Army

Military Traffic Management Command, Defense Transportation Tracking System

AGENCY: Military Traffic Management Command, DoD.

ACTION: Notice.

SUMMARY: Since its inception in February 1989, the Defense Transportation Tracking System (DTTS) has been expanded to cover a large number of shipments involving more Security Risk Categories (SRC) of munitions. The DTTS provides electronic tracking of shipments while enroute and increases security and response capability in the event of accident or incident. It is Department of Defense policy to track all SRC I through IV munitions shipments using Satellite Motor Surveillance Service (SM). Shipments of Uncategorized Division 1.1 through 1.3 munitions will use SM at the option of the DOD shipper service headquarters. The rates charged by munitions carriers for SM will be expressed as a separate accessorial charge and considered along with linehaul ratend other accessorial charges to determine the overall low rate for rating and routing purposes under Chapter 17 of the Defense Traffic Management Regulation (AR 55–355); NAVSUPINST 4600.70S; AFR 75–2; MCO P4600; DLAR 4500.3).

DATE: The effective date for this notice is 1 January 1994.

ADDRESS: Headquarters, Military Traffic Management Command, 5611.

FOR FURTHER INFORMATION CONTACT: Mr. John Piparato, (703) 756–1094. Columbia Pike, Falls Church, VA 22041–5050.

SUPPLEMENTARY INFORMATION: HQMTMC published notice of proposed policy change describing Phase III and the Final Phase of the DTTS expansion in the **Federal Register** on July 6, 1993, 58 FR 36188. Comments were submitted by the Munitions Carriers Conference, Inc., on behalf of its members.

Munitions carriers conference comment: Carriers should not be required to incorporate SM charges into linehaul rates. All services that are not an ordinary or normal incident of the linehaul service, require a separate tariff or schedule provision.

MTMC response: The proposed expansion of the DTTS envisioned a final phase beginning on 1 January 1994 which would have required SM for every DOD munitions shipment. Because the requirement for SM was to be an indivisible or essential element from origin to destination for every category of munitions being shipped, MTMC believed the rate for SM service should be included in the linehaul rate. In view of the fact that MTMC has been unable to fully implement the DTTS expansion within established program guidelines, SM will continue to be regarded as an accessorial service to be used on all SRC I through IV shipments. It will be used for "Uncategorized" munitions shipments when DOD shipper service headquarters so dictate. MTMC will continue to receive rate tenders listing SM as a separate accessorial service instead of requiring its incorporation into the linehaul rate.

Munitions carriers conference comment: MTMC's proposal to include SM charges into the linehaul rate unreasonably discriminates against munitions motor carriers. Rail carriers provide rail surveillance service (RS) as a separate accessorial service.

MRMC response: MTMC's proposal to expand the DTTS was done in recognition of evolving satellite tracking technology and shipping requirements. By seeking to integrate SM service into the linehaul rate and to consider SM as an integral part of transporting munitions shipments, MTMC was departing from past practices within the motor carrier industry. MTMC does not believe that RS is the same as SM. RS includes Military Traffic Expediting Service and inspection of a conveyance at major terminals by rail personnel for evidence of tampering with seals or security devices. SM provides DTTS with truck location reports, in transit truck status changes, and emergency situation notification. Therefore, in view of the difference in the two types of Transportation Protective Services, continuing RS as a separate accessorial service would not have constituted unreasonable discrimination against motor carriers in favor of rail carriers. However, because MTMC's initial SM program objectives have not been completely implemented, MTMC has decided to continue SM as a separate accessorial service.

MTMC's policy for determining accessorial charges and linehaul rates on munitions shipments is through free and open competition. Once rates are submitted, DOD's policy is to procure transportation services that meet its requirements at the lowest overall cost to the Government. Carriers participating in the transport of DOD munitions are advised that this provides

final notice on all phases and concludes the DTTS expansion program.

Kenneth L. Denton,

Army Federal Register Liaison Officer.

[FR Doc. 93–32092 Filed 12–30–93; 8:45 am]

BILLING CODE 5000–03–M

Army Science Board; Notice of Partially Closed Meeting

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (P.L. 92–463), announcement is made of the following Committee Meeting:

Name of Committee: Army Science Board (ASB).

Date of Meeting: 11 and 12 January 1994.

Time of Meeting: 11 January.

0900–1100 Hours (Open)
1100–1130 Hours (Closed)
1300–1700 Hours (Closed)

12 January

0830–1130 Hours (Closed)
1300–1330 Hours (Closed)
1330–1350 Hours (Open)
1400–1700 Hours (Closed)

Place: Pentagon, Washington, DC.

Agenda: The Army Science Board's Ad Hoc Study on "Innovation in Artillery Force Structure" will hold an initial meeting of the Panel Members. The intent of the meeting is to present general and specific information to the panel pertaining to force structure development within the Army. It will consist of primarily classified briefings. This meeting will be closed to the public (where indicated) in accordance with section 552b(c) of title 5, U.S.C., specifically subparagraph (1) and (4) thereof, and Title 5, U.S.C., Appendix 2, subsection 10(d). The proprietary and classified matters to be discussed are so inextricably intertwined so as to preclude opening all portions of the meeting.

The open portion of the meeting will be open to the public. Any person may attend, appear before or file statement with the committee at the time and in the matter permitted by the committee. The ASB Administrative Officer Sally Warner, may be contacted for further information at (703) 695–0781.

Sally A. Warner,

Administrative Officer, Army Science Board.

[FR Doc. 93–32105 Filed 12–30–93; 8:45 am]

BILLING CODE 3710–08–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER94–273–000, et al.]

Cambridge Electric Light Co., et al.; Electric Rate and Corporate Regulation Filings

December 23, 1993.

Take notice that the following filings have been made with the Commission:

1. Cambridge Electric Light Company

[Docket No. ER94–273–000]

Take notice that on December 14, 1993, Cambridge Electric Light Company tendered for filing its fifth annual informational filing with the Commission to set forth the actual Net Annual Costs of constructing, owning and maintaining its Transmission System for the twelve month period pending December 31, 1992.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

2. PacifiCorp

[Docket No. ER94–272–000]

Take notice that PacifiCorp, on December 16, 1993, tendered for filing in accordance with Commission's Order pertaining to agreements involving final amnesty for jurisdictional service and waiver of notice, issued July 30, 1993 under Docket No. PL93–2–002, the Letters of Agreement between the City of Ashland (City) and PacifiCorp.

Copies of this filing were supplied to the City, the Public Utility Commission of Oregon, and the Utah Public Service Commission.

PacifiCorp requests waiver of prior notice requirements be granted.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

3. New England Power Company

[Docket No. ER94–271–000]

Take notice that on December 16, 1993, New England Power Company (NEP) tendered for filing Amendments to Service Agreements Nos. 9 and 21 under FERC Electric Tariff Original Volume No. 1. Pursuant to the Commission's Final Order in Docket No. PL93–2–000, dated July 31, 1993, NEP requests waiver of the Commission's notice requirements so that the Contracts can be made effective in accordance with their terms.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

4. New York State Electric & Gas Corporation

[Docket No. ER94–270–000]

Take notice that on December 16, 1993, New York State Electric & Gas Corporation (NYSEG) tendered for filing an agreement with Otsego Electric Cooperative, Inc. (Cooperative). Pursuant to the agreement, NYSEG agreed to construct a certain tap facilities to facilitate transmission service to the Cooperative. NYSEG requests that the Commission consider the Agreement an expired CIAC agreement. In the alternative, NYSEG is filing the agreement as an initial rate schedule, and NYSEG requests an effective date of February 21, 1973. Accordingly, it has requested waiver of the Commission's notice requirements for good cause shown.

NYSEG states that a copy of this filing has been served by mail upon the Cooperative and upon the Public Service Commission of the State of New York.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

5. St. Joseph Light & Power Company

[Docket No. ER94–244–000]

Take notice that on December 14, 1993, St. Joseph Light & Power Company (St. Joseph) tendered for filing the June 17, 1991, Microwave Communication Agreement By and Among Associated Electric Cooperative, Inc., Midwest Power Systems, Inc. (formerly Iowa Power Inc.), Kansas City Power & Light Company, City of Lincoln, Nebraska Public Power District, Omaha Public Power District, and St. Joseph Light & Power Company (Agreement).

St. Joseph states that this Agreement addresses the installation and maintenance by St. Joseph of microwave communication facilities which are required and used to operate the Cooper—Fairport—St. Joseph 345 Kv Interconnection, the coordinating agreement for which was filed in Docket No. ER91–41–000, St. Joseph Rate Schedule FERC No. 19.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

6. PacifiCorp

[Docket No. ER94–266–000]

Take notice that PacifiCorp on December 16, 1993, tendered for filing in accordance with the Commission's Order pertaining to agreements involving final amnesty for jurisdictional service and waiver of notice, issued July 30, 1993 under

Docket No. PL93–2–002, the Transmission Service Agreement between Southern California Edison Company and PacifiCorp, effective October 15, 1993.

Copies of this filing were supplied to Southern California Edison Company, the Public Utility Commission of Oregon, and the Utah Public Service Commission.

PacifiCorp requests waiver of prior notice requirements be granted.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

7. Tex-La Electric Cooperative of Texas, Inc.

[Docket No. TX94–4–000]

On December 15, 1993, Tex-La Electric Cooperative of Texas, Inc., filed with the Commission an application requesting that the Commission order Texas Utilities Electric Company (TU Electric) and Southwestern Electric Service Company (SESCO) to provide transmission services pursuant to Sections 211 and 212 of the Federal Power Act.

The names of the affected parties are as follows:

Affected State regulatory authority: Public Utility Commission of Texas.

Affected Federal power marketing agency: Southwestern Power Administration.

Affected electric utilities:

Brazos Electric Power Cooperative, Inc.
Central Power & Light Company
Southwestern Electric Service Company
Texas Utilities Electric Company
Tex-La Electric Cooperative of Texas, Inc.
West Texas Utilities Company

Tex-La currently receives wholesale electric service at 28 points of delivery (PODS) on TU Electric's system and 5 PODs on SESCO's system, all within the load control area of TU Electric. Tex-La seeks transmission services from TU Electric and SESCO which will enable Tex-LA to move the operational control of these 33 PODs from the load control area of TU Electric to the load control area of West Texas Utilities Company (WTU) using remote control telemetry equipment.

The proposed date for initiating the requested transmission service is June 29, 1994, or as soon thereafter as the operational control of all Tex-La PODs on TU Electric's and SESCO's systems has been transferred to WTU and service by WTU commences. The proposed date for terminating the requested transmission services is February 1, 2025, except that, as to any such POD which Tex-La transfers prior to such date to the Southwest Power Pool, transmission service shall cease at the time of such transfer.

During 1992, the sum of the non-coincident peak demands at the 28 Tex-La PODs on the TU Electric system was 92.5 MW, and a total of 358,760 MWH of energy was delivered to Tex-La by TU Electric at such PODs. At the 5 PODs on SESCO's system, the sum of Tex-La's 1992 non-coincident peak demands was 22.9 MW, and a total of 93,367 MWH of energy was delivered to Tex-La SESCO. The transmission service being requested by Tex-La is firm network transmission service, over the TU Electric and SESCO transmission systems at a level and quantity sufficient for Tex-La to meet its loads at the PODs with (1) 27.5 MW of power and energy sold by the Southwestern Power Administration from the Denison Dam hydroelectric facility, (2) when Denison Dam is unavailable, 27.5 MW of backup power from Brazos Electric Power Cooperative, Inc., (3) 6 MW of power sold by Central Power and Light Company, and (4) wholesale power purchased from WTU for the balance of Tex-La's requirements.

Comment date: January 17, 1994, in accordance with Standard Paragraph E at the end of this notice.

8. PacifiCorp

[Docket No. ER94–253–000]

Take notice that PacifiCorp, on December 15, 1993, tendered for filing Amendment No. 1, dated November 29, 1993 (Amendment), to the Long-Term Sales Agreement between PacifiCorp and Western Area Power Administration (Western), PacifiCorp Rate Schedule FERC No. 313.

The Amendment revises the yearly load factor at which PacifiCorp will make firm energy available to Western.

PacifiCorp requests an effective date of November 1, 1993, be assigned to the Amendment.

Copies of this filing were supplied to Western, the Public Utility Commission of Oregon and the Public Utilities Commission of the State of California.

Comment date: January 10, 1994, in accordance with Standard Paragraph E at the end of this notice.

9. Florida Power Corporation

[Docket No. ER94–34–000]

Take notice that on December 17, 1993, Florida Power Corporation (FPC) tendered for filing an amendment to its October 15, 1993, filing in this docket. This amendment contains the development of the rate charge for transmission related plant, a calculation of portion of Windemere substation breakers assignable to Orlando Cogen, the procedure for calculating contribution in aid of construction and a map of the interconnection.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

10. PacifiCorp

[Docket No. ER94–279–000]

Take notice that PacifiCorp, on December 17, 1993, tendered for filing in accordance with 18 CFR part 35 of the Commission's Rules and Regulations, a request for a change in rate for energy storage services under the September 5, 1986, Energy Storage Agreement between PacifiCorp and The Public Utility District No. 1 of Snohomish County (Snohomish), PacifiCorp Rate Schedule FERC No. 243.

PacifiCorp requests a waiver of prior notice be granted and that an effective date of September 5, 1986, be assigned to the change in rate.

Copies of this filing were supplied to Snohomish and the Washington Utilities and Transportation Commission.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

11. Northeast Utilities Service Company

[Docket Nos. ER93–94–001 and ER93–417–001]

Take notice that on December 15, 1993, Northeast Utilities Service Company (NUSCO) tendered for filing a response to a deficiency letter issued by the Commission Staff and Amendments to two Service Agreements regarding service under NUSCO's Transmission Tariff No. 1. These Service Agreements provide for transmission to the NU System Companies for their power sales to Rowley Municipal Lighting Plant and Fitchburg Gas and Electric Light Company. NUSCO does not foresee the incurrence of Out of Rate Costs associated with this transmission service. NUSCO states that its filing is in accordance with the Commission's filing requirements and that copies of the filing have been mailed to Rowley and Fitchburg.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

12. Canal Electric Company

[Docket No. ER94–257–000]

Take notice that on December 15, 1993, Canal Electric Company (Canal) filed three documents under Section 205 of the Federal Power Act: (1) A Capacity Disposition Commitment between itself and Commonwealth,

which implements the terms of the Capacity Acquisition and Disposition Agreement (FERC Rate Schedule No. 21, Supplement No. 25) with respect to the assignment by Commonwealth to Canal of a portion of Commonwealth's entitlement in Canal Unit No. 2 Canal will sell a portion of Commonwealth's entitlement to the output of Canal Unit No. 2 to Washington Electric Cooperative Incorporated (WEC) over the period January 1, 1994 through January 1, 2000. This entitlement is referred to herein as the "WEC Quota;" (2) a Power Contract between itself and Commonwealth, which provides that Canal will credit all revenues from the sale of the WEC Quota to Commonwealth; and (3) a Power Sale Agreement between itself and WEC with respect to the sale of the WEC Quota.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

13. Northern Indiana Public Service Company

[Docket No. EL94–15–000]

Take notice that on December 15, 1993, Northern Indiana Public Service Company (Northern Indiana), tendered for filing a petition requesting a Commission determination that it will not exercise its jurisdiction, granted by the Federal Power Act (FPA), over service provided by Northern Indiana to Greenfield Mills, Inc. (Greenfield Mills), the owner and operator of a hydroelectric facility in Lagrange County, Indiana. Northern Indiana purchases power generated by Greenfield Mills and, should Greenfield Mills need electricity for its operations, Northern Indiana provides such "backfeed" power from its system supply. Northern Indiana will purchase power generated by Greenfield Mills during the 18-hour period from 6 a.m. to midnight at a rate of 7 mills per kilowatt hour (Kwh); power generated during the remaining six hours of the day will be purchased by Northern Indiana at a rate of 3 mills per Kwh. Northern Indiana sells backfeed to Greenfield Mills by offsetting two Kwh of power purchased for every one Kwh of power sold.

Northern Indiana seeks a declaratory order regarding Commission jurisdiction due to the *de minimis* nature of the Greenfield Mills transaction. Over the past 10 years, Northern Indiana's annual revenue from the contract has been about $865 per year and, during the past decade, Northern Indiana has sold only 615,200 Kwh of power to Greenfield Mills, representing only 38 ten-thousandths of one percent of its total sales for resale. Copies of Northern Indiana's petition for declaratory order are on file with the Commission and are available for public inspection.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

14. Public Service Company of New Mexico

[Docket No. EC94–5–000]

Take notice that on December 21, 1993, Public Service Company of New Mexico (PNM) filed an application seeking an Order or other appropriate determination approving the sale by PNM to Utah Associated Municipal Power Systems (UAMPS) of an undivided ownership interest in a PNM Main Power Transformer (step-up transformer) associated with San Juan Generating Station Unit 4, located in San Juan County, New Mexico.

Copies of this filing have been served upon UAMPS and the New Mexico Public Utility Commission.

Comment date: January 13, 1994, in accordance with Standard Paragraph E at the end of this notice.

15. Kentucky Power Company

[Docket No. ER94–61–000]

Take notice that on December 16, 1993, Kentucky Power Company (Kentucky Power) filed, as an amendment to the filing made in this Docket on October 28, 1993, a proposed form of service agreement for proposed tariff MRS–D, and a service agreement executed by the City of Olive Hill, Kentucky (Olive Hill). The amendment was submitted in compliance with a request by the Commission's Staff. Kentucky Power requests an effective date of January 1, 1994.

Kentucky Power states that a copy of its filing was served upon Olive Hill and the Kentucky Public Service Commission.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

16. Portland General Electric Company

[Docket No. ER94–277–000]

Take notice that on December 16, 1993, Portland General Electric Company (PGE) tendered for filing a Power Sales Contract under which PGE purchases power from the Bonneville Power Administration (BPA). The Power Sales Contract includes provisions under which PGE may, in certain conditions, take energy from BPA and return the energy at a later time.

Under the provisions of 18 CFR 35.11, PGE requests that the Commission grant waiver of the notice requirements of 18 CFR 35.3 to allow the Agreement to take effect on August 25, 1982.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

17. Tampa Electric Company

[Docket No. ER94–285–000]

Take notice that on December 17, 1993, Tampa Electric Company (Tampa Electric) tendered for filing a Service Agreement with the City of St. Cloud, Florida (St. Cloud) under Tampa Electric's FERC Electric Tariff, First Revised Volume No. 1, and a related revised tariff sheet.

Tampa Electric proposes that the tendered documents be made effective on February 15, 1994.

Copies of the filing have been served on St. Cloud, the other customers under Tampa Electric's tariff, and the Florida Public Service Commission.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

18. PacifiCorp

[Docket No. ER94–280–000]

Take notice that PacifiCorp, on December 17, 1993, tendered for filing, in accordance with Commission's Order pertaining to agreements involving amnesty for jurisdictional service and waiver of notice, issued July 30, 1993, under Docket No. PL93–2–002, the Operation, Construction and Ownership Agreements of the Jim Bridger Project between Idaho Power Company and PacifiCorp.

Copies of this filing were supplied to Idaho Power Company, the Public Utility Commission of Oregon, the Utah Public Service Commission, the Idaho Public Utilities Commission and the Wyoming Public Service Commission.

PacifiCorp requests in accordance with 18 CFR 35.11 of the Commission's Rules and Regulations and that a waiver of prior notice requirements be granted.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

19. New England Power Company

[Docket No. ER94–278–000]

Take notice that on December 17, 1993, New England Power Company (NEP), tendered for filing a supplement to its FPC Rate Schedule No. 77. The supplement, dated August 14, 1967, recognizes an additional pint of interconnection between NEP and Public Service of New Hampshire. NEP seeks waiver of notice under the Commission's guidelines published in Final Order, Docket No. PL93–2–000, so that the supplement may be deemed effective in accordance with its terms.

Comment date: January 11, 1994, in accordance with Standard Paragraph E at the end of this notice.

20. Entergy Services, Inc.

[Docket No. ER94–104–000]

Take notice that on November 23, 1993, Entergy Services, Inc., on behalf of Arkansas Power & Light Company, supplemented its earlier filing in this docket by filing Exhibit 2 to the Contract Between the United States of America, represented by the Secretary of Energy, acting by and through the Administrator, Southwestern Power Administration, and Arkansas Power & Light Company.

Comment date: January 6, 1994, in accordance with Standard Paragraph E at the end of this notice.

Standard Paragraphs

E. Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol 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 18 CFR 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 this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32011 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Project No. 10684; Michigan]

City of Lansing, Michigan's Board of Water & Light; Availability of Final Environmental Assessment

December 27, 1993.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for a minor license for the existing, unlicensed Moores Park Dam Hydroelectric Project, located on the Grand River, in the City of Lansing, Ingham County, Michigan, and has prepared a Final Environmental Assessment (FEA) for the project. In the FEA, the Commission's staff has analyzed the potential environmental impacts of the project and has concluded that approval of the project, with appropriate enhancement measures, would not constitute a major Federal action significantly affecting the quality of the human environment.

The Notice of Availability of Draft Environmental Assessment for the Moores Park Dam Hydroelectric Project was issued on September 22, 1993. In response, the Commission received two comment letters which were reviewed by the Commission's staff and addressed in the FEA.

Copies of the FEA are available for review in the Public Reference Branch, room 3104, of the Commission's offices at 941 North Capitol Street, NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32015 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket No. RM84–6–038]

Refunds Resulting From Btu Measurement Adjustments; Commission Action

December 27, 1993.

Take notice that for the reasons set forth below, the Federal Energy Regulatory Commission (Commission) is ceasing further efforts to recover overdue Btu refunds that are due in 147 cases where the first seller is in bankruptcy proceedings under Chapter 7 or Chapter 11 of the Bankruptcy Code.[1] The Commission believes that further efforts are not warranted because they are not likely to result in any additional recovery, and the Commission's resources are better utilized in other areas. The Commission emphasizes, however, that by this action it is not waiving or extinguishing the Btu refund obligation required to be paid by any bankruptcy court order.

Background

In 1983, the United States Court of Appeals for the District of Columbia Circuit vacated the Commission's regulations which permitted first sellers to measure the Btu content of natural gas based on the condition of the gas as actually delivered (the "dry rule") and required maximum lawful prices under the Natural Gas Policy Act of 1978 (NGPA) to be calculated by measuring the Btu content under the "wet" rule that had been in effect under the Natural Gas Act.[2]

Order No. 399, et seq.,[3] which implemented the court's decision, required first sellers to refund all overcharges resulting from the use of the "dry rule" by November 5, 1986. In addition, interstate and intrastate pipelines were required to file reports identifying first sellers who had not paid their Btu refunds,[4] and interstate pipelines were required to flow the Btu refunds through to their customers.[5]

More than $1 billion of Btu overcharges have been refunded to customers pursuant to Order No. 399, *et seq.* The pipelines' refund reports initially showed 5,610 cases totalling over $140 million where the Btu refunds had not been paid. Staff's efforts pursuing payment of outstanding Btu refund obligations reduced the number of pending Btu refund cases to 560 and the total of unpaid Btu refunds to approximately $9.8 million. These numbers do not include 553 cases where the Commission previously determined to cease further collection efforts because such efforts were not likely to result in payment of the Btu refund.[6]

Discussion

As a result of its efforts pursuing the payment of outstanding Btu refund obligations, the Commission has determined that the first sellers in the 147 cases listed on Appendix A are in bankruptcy proceedings under Chapter 7 or Chapter 11 of the Bankruptcy Code. The refund obligation in these cases range from $112.61 to $709,463.38, and

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[1] The bankruptcy code is contained in Title 11 of the U.S. Code. The first sellers are listed on Appendix A. Since some first sellers owe refunds to more than one pipeline, the number of first sellers is less than the number of cases.

[2] Interstate Natural Gas Association of America v. Federal Energy Regulatory Commission 16 F.2d 1 (D.C. Cir. 1983), *cert. denied,* 465 U.S. 1108 (1984).

[3] Order No. 399, 49 FR 37735 (Sept. 26, 1984), FERC Stats. & Regs. [Regulations Preambles 1982–1985] ¶ 30,597 (Sept. 20, 1984); Order No. 399–A, 49 FR 46353 (Nov. 26, 1984), FERC Stats. & Regs. [Regulations Preambles 1982–1985] ¶ 30,612 (Nov. 20, 1984); Order No. 399–B, 50 FR 30141 (July 24, 1985), FERC Stats. & Regs. [Regulation Preambles 1982–1985], ¶ 30,651 (July 18, 1985).

[4] Pipelines were required to file the reports by December 18, 1984, June 17, 1985, and January 5, 1987.

[5] The Commission held that the state regulatory agency that regulates an intrastate pipeline may determine the disposition of Btu refunds received by those pipelines.

[6] *See* Notices published in the **Federal Register** on August 6, 1990 (55 FR 32,028), February 14, 1991 (56 FR 6,000), and June 16, 1992 (57 FR 26,836). These cases consisted of 467 cases where staff could not locate the first seller; 28 cases where the first seller filed for bankruptcy under Chapter 11 and the debt was less than $2,000; and 58 cases where the first seller's assets had been liquidated under Chapter 7. The notices emphasized that if the first sellers were subsequently located, the cases would be reactivated.

totals $3,533,636.05. The Commission does not know the actual disposition of the bankruptcy proceedings of the first sellers listed on Appendix A. However, such knowledge is not necessary for the action that the Commission is now taking. Most of the bankruptcy proceedings were filed more than 4 years ago, and the Btu refund obligation will have been treated in those proceedings in accordance with the applicable provisions of the Bankruptcy Code. Accordingly, the Commission believes that no purpose would be served by the Commission continuing to process these cases. Therefore, the Commission will not expend any further staff resources on these cases, and they will be considered closed. This action, however, does not waive or extinguish the payment of any Btu refund obligation that is required to be paid by any order of the bankruptcy court.

The dollar range in these cases follows:

Dollar range	No. of cases	Refund obligation
$100,001–$710,000	8	$1,761,854.11
50,001–100,000	9	637,526.63
25,001–50,000	13	480,179.61
2,001–25,000	80	631,442.18
100–2,000	37	22,633.52

By direction of the Commission.

Lois D. Cashell,

Secretary.

Appendix A—First Sellers That Filed Chapter 7 or 11 Bankruptcy

A. Rex Jasper Jr.
Alan J. Antweil
Amarex Inc.
Ambra Oil & Gas Co.
Amcole Energy Corp.
American Public Energy Co.
Amquest Corp.
Arapaho Petroleum Inc.
Arrowhead Energy Co.
Bridge Oil (USA) Inc. (pred: Nucorp Energy Inc.)
Cayman Production Co.*
Clerk U.S. Bankruptcy Court of DC Reg. Bank 83–B–O
Damar
Delta Energy Resources
Eads Exploration Inc.
Earth Energy Resources 19
Earth Energy Resources Inc.
Energy Resources Oil
Enico Pipeline
Equipment Inc.
Fritz, J.F. (Payee Erin Baker, Trustee)
Frontier Exploration Inc.
G. Murrell (A/C Allied Bank of TX)
George Schurman
Great Western Resources
Herbert E. Russell
Heston Oil Co.
Ike Lovelady
Johnson Oil & Gas Corp.
L & L Operating Co.
League Minerals
Lingen Oil & Gas Inc.
Magic Circle Energy Corp.
Majestic Energy Corp.
Marine Contractors & Supply Inc.
Marion Corp.
McMurrey Petroleum Inc.
Mgf Mansfield Inc.
Mgf Oil Corp.
Milton Wessels/Constructive Trust/ Uriah Exploration
Monterrey Petroleum
Morris R. Antweil
O'Connor & Young Drilling & Chapman Drilling
Ohio Partners Oil Co.
Originala Petroleum
Owen, J.P. & Co. Inc.
Partners Oil Co.
Pecos Irrigation Co.
Petromark Resources Co.
Pickard Oil Co. & J.W. Kirk Inc.
Placid Oil Co.
Pontchartrain Oil & Gas Corp. #2
Ports of Call Oil Co.
Quintex Petroleum Corp.
R. N. Hillin d/b/a Hillin Production Co.
Ramsey Property Mgmts, Inc. (Champion Reserve-CRI)
Resources Investment Corp.
Richland Resources Corp.
Robinson Brothers
Robinson Brothers Drilling Inc.
Royce Lawson *
S & J Operating Co.
Seneca Oil Co.
Smith Petroleum Co.
Stockton Oil and Gas
Taylor Operating Co.
Tex-OK Petroleum Inc.
Texas General Petroleum Corp.
Texas General Resources Inc.
Tomlinson Oil Co. Inc.
Tondu Energy Corp.*
Trans-Western Exploration Inc. (A/C MBank Dallas N)
Transcontinental Oil Corp. (C/O Paul v. Degenhart)
William W. Hamilton (Attn: Brett Martin)
Winter Hawk Ltd.

*Filed Chapter 7 Bankruptcy.

[FR Doc. 93–32043 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket No. JD94–01657T; Oklahoma–59]

State of Oklahoma; NGPA Notice of Determination by Jurisdictional Agency Designating Tight Formation

December 27, 1993.

Take notice that on December 20, 1993, the Corporation Commission of the State of Oklahoma (Oklahoma) submitted the above-referenced notice of determination pursuant to § 271.703(c)(3) of the Commission's regulations, that the basal Spiro Sandstone member of the Atoka Formation (Basal Atoka Formation), underlying a portion of Latimer County, Oklahoma, qualifies as a tight formation under section 107(c)(5) of the Natural Gas Policy Act of 1978. The recommended area is described as Sections 4, 8, and 17 of T6N, R18E, in Latimer County, Oklahoma.

The notice of determination also contains Oklahoma's findings that the referenced formation meets the requirements of the Commission's regulations set forth in 18 CFR part 271.

The application for determination is available for inspection, except for material which is confidential under 18 CFR 275.206, at the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington DC 20426. Persons objecting to the determination may file a protest, in accordance with 18 CFR 275.203 and 275.204, within 20 days after the date this notice is issued by the Commission.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32016 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket No. JD94–01659T; Oklahoma–61]

State of Oklahoma; NGPA Notice of Determination by Jurisdictional Agency Designating Tight Formation

December 27, 1993.

Take notice that on December 20, 1993, the Corporation Commission of the State of Oklahoma (Oklahoma) submitted the above-referenced notice of determination pursuant to § 271.703(c)(3) of the Commission's regulations, that the basal Spiro Sandstone member of the Atoka Formation (Basal Atoka of the Union Valley Formation (Cromwell Formation), at a depth of 9,800 feet, underlying a portion of Haskell County, Oklahoma, qualify as tight formations under Section 107(c)(5) of the Natural Gas Policy Act of 1978. The recommended area is the same for both formations and is described as all of Section 7, the E/2 of Section 18, the E/2 of Section 19 and all of Section 20 in T7N, R20E, in Haskell County, Oklahoma.

The notice of determination also contains Oklahoma's findings that the referenced formations meet the requirements of the Commission's regulations set forth in 18 CFR part 271.

The application for determination is available for inspection, except for material which is confidential under 18 CFR 275.206, at the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington DC 20426. Persons objecting to the determination may file a protest, in accordance with 18 CFR 275.203 and 275.204, within 20 days after the date this notice is issued by the Commission.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32017 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket No. JD94–01658T; Oklahoma–60]

State of Oklahoma; NGPA Notice of Determination by Jurisdictional Agency Designating Tight Formation

December 27, 1993.

Take notice that on December 20, 1993, the Corporation Commission of the State of Oklahoma (Oklahoma) submitted the above-referenced notice of determination pursuant to § 271.703(c)(3) of the Commission's regulations, that the Booch Sandstones of the McAlester Formation (Booch Formation), at a depth of 2,225 feet, and the Hartshorne Formation, at a depth of 2,625 feet, underlying a portion of Latimer County, Oklahoma, qualify as tight formations under Section 107(c)(5) of the Natural Gas Policy Act of 1978. The recommended area for both formations is the same and is described as Sections 9 and 10 of T6N, R19E, in Latimer County, Oklahoma.

The notice of determination also contains Oklahoma's findings that the referenced formations meet the requirements of the Commission's regulations set forth in 18 CFR part 271.

The application for determination is available for inspection, except for material which is confidential under 18 CFR 275.206, at the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426. Persons objecting to the determination may file a protest, in accordance with 18 CFR 275.203 and 275.204, within 20 days after the date this notice is issued by the Commission.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32018 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket No. CP94–139–000, et al.]

Tennessee Gas Pipeline Company, et al.; Natural Gas Certificate Filings

December 20, 1993.

Take notice that the following filings have been made with the Commission:

1. Tennessee Gas Pipeline Company

[Docket No. CP94–139–000]

Take notice that on December 17, 1993, Tennessee Gas Pipeline Company (Tennessee), P.O. Box 2511, Houston, Texas 77252, filed in Docket No. CP94–139–000 a request pursuant to §§ 157.205 and 157.212 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205 and 157.212) for authorization to construct and operate delivery tap facilities in Alcorn County, Mississippi to enable Tennessee to implement an interruptible transportation service for Eastex Hydrocarbons, Inc. (Eastex), under the blanket certificate issued in Docket No. CP82–413–000, pursuant to section 7(c) of the Natural Gas Act, all as more fully set forth in the request which is on file with the Commission and open to public inspection.

Tennessee states that it entered into an interruptible transportation agreement with Eastex for service under Tennessee's Rate Schedule IT. Tennessee indicates that, in order to implement the delivery of gas to Eastex of up to 600 dt equivalent of natural gas per day, it proposes to install, own, operate and maintain a two-inch hot tap assembly, interconnect piping and measurement facilities in Alcorn County, Mississippi. It is indicated that the tie-in assembly would be constructed on Tennessee's existing right of way and that the measurement facility would be installed on a site adjacent to Tennessee's right of way. Tennessee states that the facilities would cost an estimated $19,142, which would be 100% reimbursable to Tennessee.

Tennessee states that construction of the proposed delivery point is not prohibited by its existing tariff. Tennessee further states that the addition of the delivery facilities would have no impact on Tennessee's peak day and annual deliveries.

Comment date: February 3, 1994, in accordance with Standard Paragraph G at the end of this notice.

2. Panhandle Eastern Pipe Line Company

[Docket No. CP94–133–000]

Take notice that on December 15, 1993, Panhandle Eastern Pipe Line Company (Panhandle), P.O. Box 1642, Houston, Texas 77251–1642, filed in Docket No. CP94–133–000, a request pursuant to §§ 157.205 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205) for authorization to construct, own and operate a new delivery tap and associated facilities for Illinois Power Company (Illinois Power), a local distribution company, located in Moultrie County, Illinois, under the authorization issued in Docket No. CP83–83–000 pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the request which is on file with the Commission and open to public inspection.

Panhandle proposes to install a hot tap, approximately 800 feet of 10-inch pipeline and a M&R Station in order to deliver up to 75,000 Mcf per day of natural gas to Illinois Power. Panhandle estimates that the cost of the proposed facilities is approximately $832,000. Panhandle states that the volumes to be delivered through the proposed facilities are within the certificated entitlements of Illinois Power's current transportation agreements under Rate Schedules EIT and EFT. Panhandle submits that there will be no impact on Panhandle's peak day or annual deliveries to Illinois Power.

Comment date: February 3, 1994, in accordance with Standard Paragraph G at the end of this notice.

3. Mississippi River Transmission Corporation

[Docket No. CP94–136–000]

Take notice that on December 15, 1993, Mississippi River Transmission Corporation (MRT), 9900 Clayton Road, St. Louis, Missouri 63124, filed in Docket No. CP94–136–000 a request pursuant to §§ 157.205 and 157.212 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205, 157.212) for authorization to upgrade a delivery point used to serve Illinois Power Company (IP), an existing transportation customer, under MRT's blanket certificate issued in Docket No. CP82–489–000 pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the request that is on file with the Commission and open to public inspection.

MRT proposes to upgrade its existing delivery point serving IP's Wood River Power Plant in East Alton, Illinois, by replacing two 4-inch control valves with two 6-inch control valves. MRT explains that the proposed facilities would reduce the pressure drop associated with deliveries to the Wood River Power Plant and thereby enable MRT to serve increased peak hourly demands of that facility. MRT advises that the upgrade

would not result in an increase in the maximum daily or annual volumes which MRT would transport for IP under current agreements and authority. MRT estimates that the cost of the facilities would be $9,200 which would be reimbursed.

Comment date: February 3, 1994, in accordance with Standard Paragraph G at the end of this notice.

Standard Paragraphs

G. Any person or the Commission's staff may, within 45 days after issuance of the instant notice by the Commission, file pursuant to Rule 214 of the Commission's Procedural Rules (18 CFR 385.214) a motion to intervene or notice of intervention and pursuant to § 157.205 of the Regulations under the Natural Gas Act (18 CFR 157.205) a protest to the request. If no protest is filed within the time allowed therefor, the proposed activity shall be deemed to be authorized effective the day after the time allowed for filing a protest. If a protest is filed and not withdrawn within 30 days after the time allowed for filing a protest, the instant request shall be treated as an application for authorization pursuant to section 7 of the Natural Gas Act.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32013 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket No. CP94–137–000, et al.]

Trunkline Gas Company, et al.; Natural Gas Certificate Filings

December 23, 1993.

Take notice that the following filings have been made with the Commission:

1. Tennessee Gas Pipeline Company

[Docket No. CP94–137–000]

Take notice that on December 16, 1993, Tennessee Gas Pipeline (Tennessee), P.O. Box 2511, Houston, Texas, 77252, filed in Docket No. CP94–137–000 an application pursuant to section 7(b) of the Natural Gas Act for permission and approval to abandon certain facilities by sale to Kinder Gas Processing Corporation (Kinder), all as more fully set forth in the request which is on file with the Commission and open to public inspection.

Specifically, Tennessee seeks authorization to abandon by sale to Kinder, a 3.6 mile 4.5-inch diameter gathering line that extends west from Tennessee's K–N Line into the LeBlanc field in Allen Parish, Louisiana.

Comment date: January 13, 1994, in accordance with Standard Paragraph F at the end of this notice.

2. Northwest Pipeline Corporation

[Docket No. CP94–134–000]

Take notice that on December 15, 1993, Northwest Pipeline Corporation (Northwest), 295 Chipeta Way, Salt Lake City, Utah 84158, filed in Docket No. CP94–134–000 a request pursuant to §§ 157.205 and 157.216 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205, 157.216) for authorization to abandon by sale to The Washington Water Power Company (Water Power) its existing laterals located in Whitman, Washington and Union Counties, Oregon, under Northwest's blanket certificate issued in Docket No. CP82–433–000 pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the request that is on file with the Commission and open to public inspection.

Northwest proposes to abandon by sale to Water Power its existing La Crossee, Rosalia and St. Johns Laterals which are located in Whitman County, Washington and its existing Union Lateral in Union County, Oregon at a price of $6,667.

Comment date: February 7, 1994, in accordance with Standard Paragraph G at the end of this notice.

3. CNG Producing Company

[Docket No. CP94–146–000]

Take notice that on December 17, 1993, CNG Producing Company (CNG Producing), 1450 Poydras Street, New Orleans, Louisiana 70112–6000, filed in Docket No. CP94–146–000 a petition pursuant to section 16 of the Natural Gas Act (NGA) and rule 207(a)(2) of the Commission's Rules of Practice and Procedure (18 CFR 385.207(a)(2)), for a declaratory order disclaiming Commission jurisdiction over certain facilities and the services provided through them, all as more fully set forth in the petition which is on file with the Commission and open to public inspection.

CNG Producing seeks a declaratory order from the Commission finding that certain facilities would be gathering facilities, exempt from the Commission's jurisdiction under section 1(b) of the NGA, at such time as the facilities are acquired from CNG Transmission Corporation (CNGT). CNG Producing states that CNGT has agreed to sell to CNG Producing at net book value its interest in nine offshore compressors (a total of 11,125 horsepower with the largest compressor being rated at 3,500 horsepower) at six locations, seven offshore pipelines (ranging from 378 feet to 7.3 miles in length and 12 to 20 inches in diameter), and associated measurement and regulation facilities.[1]

CNG Producing explains that the facilities are part of CNGT's miscellaneous facilities located in the Gulf of Mexico that were constructed between 1974 and 1981 to move purchased gas from the wellhead to third-party pipeline facilities for transportation to onshore transmission facilities in Louisiana. CNG Producing advises that the facilities are currently used to move gas into offshore pipelines for redelivery onshore. CNG Producing states that, upon acquisition, the facilities would be used by CNG Producing to gather and market natural gas, including its own production. CNG Producing further states that the facilities are not owned in their entirety by CNGT, but each facility is jointly owned by at least one other party.

Comment date: January 13, 1994, in accordance with the first paragraph of Standard Paragraph F at the end of this notice.

Standard Paragraphs

F. Any person desiring to be heard or to make any protest with reference to said application should on or before the comment date, file with the Federal Energy Regulatory Commission, 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 385.214 or 385.211) 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.

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Energy Regulatory 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 motion to intervene is

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[1] CNGT filed in Docket No. CP93–340–000 to abandon the facilities by sale to CNG Producing. See notice of filing issued by the Commission on May 17, 1993 (58 FR 29573, May 21, 1993).

filed within the time required herein, if the Commission on its own review of the matter finds that a grant of the certificate and/or permission and approval for the proposed abandonment are required by the public convenience and necessity. If a motion for leave to intervene is timely filed, or if the Commission on its 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.

G. Any person or the Commission's staff may, within 45 days after issuance of the instant notice by the Commission, file pursuant to Rule 214 of the Commission's Procedural Rules (18 CFR 385.214) a motion to intervene or notice of intervention and pursuant to § 157.205 of the Regulations under the Natural Gas Act (18 CFR 157.205) a protest to the request. If no protest is filed within the time allowed therefor, the proposed activity shall be deemed to be authorized effective the day after the time allowed for filing a protest. If a protest is filed and not withdrawn within 30 days after the time allowed for filing a protest, the instant request shall be treated as an application for authorization pursuant to section 7 of the Natural Gas Act.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32012 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

[Docket Nos. RP93–36–007 and RS92–45–011]

Natural Gas Pipeline Co. of America; Filing To Implement Revised Compliance Rates

December 27, 1993.

Take notice that on December 22, 1993, Natural Gas Pipeline Company of America (Natural) filed in the captioned dockets to implement revised base rates in response to changes ordered by the Commission in its Order No. 636 restructuring compliance plan. Specifically, Natural has requested that the revised Tariff sheets listed on Exhibit A to the filing be made effective in these dockets on January 1, 1994.

Natural states that the purpose of the filing is to reflect a discount adjustment in its restructuring compliance rates. The need for this adjustment arises because the Commission has required Natural to design rates under its special cost recovery procedure for Account No. 858 costs based on contract demands for all open access firm contracts, irrespective of discounting, and to take discounting into consideration in base rates. Natural's filing herein restores the discounting adjustment which had previously been eliminated when Natural removed Account No. 858 costs from base rates.

Natural states that copies of its filing were served on parties to this proceeding, jurisdictional customers and interested state regulatory agencies.

Any person desiring to protest said filing should file a motion to protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rule 211 of the Commission's Rules of Practice and Procedure, 18 CFR 385.211. All such protests should be filed on or before January 4, 1994. 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. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32019 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–M

Docket No. RP94–87–000]

Natural Gas Pipeline Co. of America; Proposed Changes in FERC GAS Tariff

December 27, 1993.

Take notice that on December 22, 1993, Natural Gas Pipeline Company of America (Natural) tendered for filing as part of its FERC Gas Tariff, Sixth Revised Volume No. 1, First Revised Sheet No. 1, First Revised Sheet No. 14 and Original Sheet No. 25, to be effective January 1, 1994.

Natural states that the filing is submitted to commence recovering effective January 1, 1994, approximately $21 million in known and measurable gas supply realignment (GSR) costs which will be incurred by Natural as a consequence of Order No. 636.

Natural requested specific waivers of Section 38 of its Tariff and the Commission's Regulations, including the requirements of § 154.63, to the extent necessary to permit the tariff sheets as submitted herein to become effective January 1, 1994.

Natural states that copies of the filing are being mailed to Natural's jurisdictional customers and interested state regulatory agencies.

Natural states that it has reached a tentative settlement with members of the Natural Customer Group (NCG) regarding recovery from them for GSR costs. Members of the NCG may preserve their rights by filing an abbreviated protest which may be supplemented if the settlement is not finalized and approved.

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, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with §§ 385.214 and 385.211 of the Commission's Rules and Regulations. All such protests should be filed on or before January 4, 1994. 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 this filing are on file with the Commission and are available for public inspection in the public reference room.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32020 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–M

[Docket No. RP94–86–000]

Natural Gas Pipeline Co. of America; Proposed Changes in FERC Gas Tariff

December 27, 1993.

Take notice that on December 22, 1993, Natural Gas Pipeline Company of America (Natural) tendered for filing as part of its FERC Gas Tariff, Sixth Revised Volume No. 1, Second Revised Sheet No. 1, Sheet No. 23 and Original Sheet No. 24, to be effective January 1, 1994.

Natural states that the filing is submitted pursuant to Section 21 of the General Terms and Conditions of Natural's FERC Gas Tariff, Sixth Revised Volume No. 1, as a limited rate filing under Section 4 of the Natural Gas Act and the Rules and Regulations of the Federal Energy Regulatory Commission (Commission) promulgated thereunder. The rate adjustments filed for are designed to recover approximately $50.2 million of annual fixed Account No. 858 costs incurred by Natural under contracts for transportation capacity on other pipelines. No buyout and buydown costs are reflected in this filing.

Natural states that, due to ongoing discussions with the Natural Customer Group regarding Gas Supply Realignment Costs and Account No. 858 costs, it was mutually agreed to let the effective date of its filing slip to January

1, 1994 with recovery of costs over a five-month period rather than six months.

Natural requested specific waivers of Section 21 of its Tariff and the Commission's Regulations, including the requirements of § 154.63, to the extent necessary to permit the tariff sheets to become effective January 1, 1994.

Natural states that copies of the filing are being mailed to Natural's jurisdictional customers and interested state regulatory agencies.

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, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with §§ 385.214 and 385.211 of the commission's Rules and Regulations. All such 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 this filing are on file with the Commission and are available for public inspection in the public reference room.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32021 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–M

[Docket No. CP94–154–000]

Tennessee Gas Pipeline Company Southern Natural Gas Co.; Application

December 27, 1993.

Take notice that on December 22, 1993, Tennessee Gas Pipeline Company (Tennessee), P.O. Box 2511, Houston, Texas 77252–2511 and Southern Natural Gas Company (Southern), P.O. Box 2563, Birmingham, Alabama 35202–2563, jointly referred to as Applicants, filed in Docket No. CP94–154–000 an application pursuant to section 7(b) of the Natural Gas Act, for permission and approval to abandon an emergency gas exchange service, effective September 1, 1993, all as more fully set forth in the application on file with the Commission and open to public inspection.

The Applicants were authorized in Docket No. CP63–146, to construct and operate two emergency interconnections between the pipeline facilities of the two companies, and to use those facilities to provide an emergency exchange of natural gas between Tennessee and Southern. The facilities were constructed at a point where Southern's 24 inch Second North Main Line crossed Tennessee's 30 inch Delta Portland Line in Lowndes County, Mississippi, and at a point where Southern's 18 inch line crossed Tennessee's 30 inch line in Clarke County, Mississippi. The facilities were only to be used two accommodate a gas-for-gas emergency exchange. It is stated that the Applicants performed the emergency exchange service under agreements, denoted as Tennessee's Rate Schedule X–13 and Southern's Rate Schedule X–15, which were both dated November 1, 1962, as amended. It is further stated that the emergency gas-for-gas exchange was designed to be used when either Southern or Tennessee was confronted with an emergency on its system, which could be alleviated by deliveries of natural gas from the system of the other.

The Applicants state that they are proposing to abandon the emergency service because, the restructure of services under Order No. 636 has rendered the above-referenced agreement unnecessary and obsolete.

No facilities are proposed to be abandoned herein.

Any person desiring to be heard or to make any protest with reference to said application should on or before January 18, 1994, file with the Federal Energy Regulatory Commission, 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 385.214 or 385.211) 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.

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Energy Regulatory 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 motion to intervene is filed within the time required herein, if the Commission on its own review of the matter finds that permission and approval for the proposed abandonment are required by the public convenience and necessity. If a motion for leave to intervene is timely filed, or if the Commission on its 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 Applicants to appear or be represented at the hearing.

Lois D. Cashell,

Secretary.

[FR Doc. 93–32014 Filed 12–30–93; 8:45 am]

BILLING CODE 6717–01–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–4820–9]

Notice of Assessment of Need for Supplement to Supplemental Environmental Impact Statement on Long Term Residuals Management for Metropolitan Boston

AGENCY: Environmental Protection Agency (Region I).

ACTION: Notice.

SUMMARY: During 1989, the United States Environmental Protection Agency, Region I, Boston, (EPA) prepared Draft and Final Supplemental Environmental Impact Statements (DEIS and FSEIS, respectively) evaluating the Massachusetts Water Resources Authority's (MWRA) Long-Term Residuals Management Program for Metropolitan Boston under the National Environmental Policy Act (NEPA). The DSEIS and FSEIS evaluated a variety of alternative sites and technologies for managing sewage residuals, including the program then proposed by MWRA. Based on this evaluation, EPA ultimately approved the MWRA's chosen plan which included a primary program and a backup program. In March, 1990 EPA issued its record of Decision (ROD) completing the NEPA review.

The MWRA's primary program consisted of dewatering and heat drying sludge into pellets for marketing for beneficial uses (specifically, for land application as a fertilizer or soil conditioner). EPA and others supported the MWRA's beneficial use program as an environmentally progressive approach to sludge management because the sludge was to be converted from a disposable waste to a usable product. The backup program, consisted of disposal of dewatered sludge and/or sludge pellets on an as-needed basis at an MWRA-owned and operated landfill which was to be constructed in Walpole, Massachusetts. The backup program was designed in recognition of the possibilities that (1) technical

problems at the heat drying facility could result in the MWRA needing to dispose of dewatered sludge; (2) pellet marketing success could fluctuate over time due to changing demand or competition from other producers; and (3) problems with meeting land application regulations could occur.

Recently, the MWRA proposed a modification to the backup program for sludge management. More specifically, MWRA proposed replacing immediate construction of the Walpole landfill with a new multi-faceted alternative. The new alternative consists of three principal elements. First, the MWRA has entered into a contract reserving disposal capacity for its entire sludge output over 30 years, whether in pellet or cake form, at a commercial landfill in Utah owned and operated by the East Carbon Development Corporation Environmental, L.C. (ECDC). This contract also provides the MWRA with backup disposal capacity, if needed, at a landfill in North Dakota owned and operated by USPCI, Inc. (USPCI). Second, the MWRA has developed an "Emergency Preparedness Plan" (EPP) designed to ensure that the MWRA is immediately able to secure alternative commercial disposal services in the event that both the Utah and North Dakota landfills were to become unavailable. Third, the MWRA has committed to retain ownership of the Walpole landfill site, and to maintain the necessary permits and approvals so that the landfill could promptly be built if commercial backup services became unavailable or unreliable.

Notice is hereby given that in accordance with its responsibilities under NEPA, EPA has assessed the need for a supplement to the Supplemental Environmental Impact Statement on Residuals Management for the Boston Metropolitan Area, in light of the recently proposed modifications made by the MWRA.

EPA has concluded that the MWRA's modified backup disposal program appears to be environmentally sound and adequately reliable to support the overall residuals management program. EPA has also determined that the new backup program will not affect the quality of the human environment in a significant manner or to a significant extent not already considered in the FSEIS. Therefore, preparation of a supplement to the FSEIS is not required and will not be prepared.

Essentially, just as MWRA residuals were determined to be safe for landfilling at the proposed Walpole landfill, the materials should also be safe for landfilling at other permitted landfills, such as the ECDC or USPCI landfills. In addition, while the transportation impacts of the original plan were acceptable, such impacts should actually be reduced under the new plan because the MWRA will rely on rail transport to the ECDC landfill.

In addition, EPA believes that the MWRA's modifications to the backup plan do not significantly reduce the reliability of the residuals management plan. Therefore, the MWRA residuals management program is still reasonably and sufficiently reliable. The program continues to focus on heat drying and pellet marketing for reuse as its primary option, while providing for environmentally sound landfilling as the backup. The key change is that the Walpole landfill has been relegated to the status of a tertiary backup, while out-of-state commercial landfills (i.e., the ECDC, USPCI and EPP landfills) have become the primary and secondary backups. While the new program raises concerns such as the potential for commercial landfills going out-of-business or disposal at out-of-state landfills being subject to political problems, the MWRA has developed a program that reasonably addresses those concerns in light of current conditions. Moreover, the new program has one element of added reliability in that the ECDC/USPCI contract provides substantially greater disposal capacity than would have been provided by the Walpole landfill alone.

To obtain a copy of EPA's Assessment of Need For Supplement to The Supplemental Environmental Impact Statement on Long Term Residuals Management For Metropolitan Boston contact: Ann Rodney, U.S. EPA, Region I, JFK Federal Building, Boston, MA 02203, (617) 565–4424.

Paul Keough,

Acting Regional Administrator.

[FR Doc. 93–32061 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–P

[FRL–4821–5]

Draft Guidance Document on Indirect Exposure Assessment

AGENCY: Environmental Protection Agency.

ACTION: Notice of Extension of Public Comment Period.

SUMMARY: This notice announces the extension of the public comment period for the external review draft of a draft guidance document entitled, Addendum to the Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions. This draft Addendum provides revisions and updates to the Agency's 1990 interim final document, Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions.

DATES: In the November 22, 1993, **Federal Register** (58 FR 61688–61689), EPA announced that the public comment period for the external review draft of this document would be from November 22 through January 7, 1994. The Agency is now extending the public comment period to February 15, 1994. Comments must be in writing and postmarked by the February date.

ADDRESSES: To obtain a copy of the draft Addendum or the 1990 interim final Methodology, interested parties should write the ORD Publications Center, CERI–FRN, U.S. Environmental Protection Agency, 26 West Martin Luther King Drive, Cincinnati, OH 45268, or telephone 513–569–7562; facsimile 513–569–7566. Please provide your name, mailing address, and the EPA document number. The titles are as follows: external review draft of the Addendum to the Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions (EPA/600/AP–93/003); Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions (EPA/600/6–90/003).

The draft Addendum and the interim final Methodology document will also be available for inspection at the RCRA Docket, the ORD Public Information Shelf/EPA Headquarters Library, and all of the EPA Regional and Laboratory Libraries. The EPA Headquarters Library is located in room M2904, and is open between the hours of 10 a.m. and 4 p.m., Monday through Friday, excluding Federal holidays.

Commenters must send an original and two copies of their comments to: Docket Clerk, Office of Solid Waste (5305), Docket Number F–93–AMCA–FFFFF, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. Comments should include the docket number F–93–AMCA–FFFFF. The RCA docket is located in Room M2616 at EPA Headquarters and is available for viewing from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. Appointments may be made by calling 202–260–9327. Copies cost $0.15 per page; charges under $25.00 are waived.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA/Superfund Hotline, Office of Solid Waste, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; telephone 800–424–9346; TDD 800–553–7672 (hearing impaired);

in the Washington, DC, metropolitan area, the number is 703–412–9810; TDD 703–412–3323. For technical information, the Hotline will provide a specific contact person, depending on the particular subject matter.

Dated: December 27, 1993.

Carl R. Gerber,

Acting Assistant Administrator for Research and Development.

[FR Doc. 93–32060 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–M

[FRL–4821–1]

Illinois: Final Determination of Adequacy of State Municipal Solid Waste Permit Program

AGENCY: Environmental Protection Agency.

ACTION: Notice of final determination of full program adequacy for Illinois' application.

SUMMARY: Section 4005(c)(1)(B) of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, requires States to develop and implement permit programs to ensure that municipal solid waste landfills (MSWLFs) which may receive hazardous household waste or small quantity generator waste will comply with the revised Federal MSWLF Criteria (40 CFR part 258). RCRA section 4005(c)(1)(C) requires the Environmental Protection Agency (USEPA) to determine whether States have adequate "permit" programs for MSWLFs, but does not mandate issuance of a rule for such determinations. The USEPA has drafted and is in the process of proposing a State/Tribal Implementation Rule (STIR) that will provide procedures by which the USEPA will approve, or partially approve, State/Tribal landfill permit programs. The Agency intends to approve adequate State/Tribal MSWLF permit programs as applications are submitted. Thus, these approvals are not dependent on final promulgation of the STIR. Prior to promulgation of the STIR, adequacy determinations will be made based on the statutory authorities and requirements. In addition, States/Tribes may use the draft STIR as an aid in interpreting these requirements. The Agency believes that early approvals are an important benefit. Approved State/Tribal permit programs provide interaction between the State/Tribe and the owner/operator regarding site-specific permit conditions. Only those owners/operators located in States/Tribes with approved permit programs can use the site-specific flexibility provided by 40 CFR part 258 to the extent the State/Tribal permit program allows such flexibility. The USEPA notes that regardless of the approval status of a State/Tribe and the permit status of any facility, the revised Federal Criteria will apply to all permitted and unpermitted MSWLF facilities.

Illinois applied for a determination of adequacy under section 4005 of RCRA. The USEPA reviewed Illinois' application and tentatively determined that Illinois' permit program is adequate to ensure compliance with the revised Federal MSWLF Criteria. After consideration of all comments received, the USEPA is today issuing a final determination that the State's program is adequate.

EFFECTIVE DATE: The determination of adequacy for Illinois shall be effective on January 3, 1994.

FOR FURTHER INFORMATION CONTACT: USEPA Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, Attn: Mr. Andrew Tschampa, mailcode HRP–8J, telephone (312) 886–0976.

SUPPLEMENTARY INFORMATION:

A. Background

On October 9, 1991, the USEPA promulgated revised Federal MSWLF Criteria (40 CFR part 258). Subtitle D of RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), requires States to develop permitting programs to ensure that facilities comply with the revised Federal Criteria. Subtitle D also requires in section 4005 that the USEPA determine the adequacy of State municipal solid waste landfill permit programs to ensure that facilities comply with the revised Federal Criteria. To fulfill this requirement, the Agency has drafted and is in the process of proposing a State/Tribal Implementation Rule (STIR). The rule will specify the requirements which State/Tribal programs must satisfy to be determined adequate.

The USEPA intends to approve State/Tribal MSWLF permit programs prior to promulgation of STIR. The USEPA interprets the requirements for States or Tribes to develop "adequate" programs for permits or other forms of prior approval to impose several minimum requirements. First, each State/Tribe must have enforceable standards for new and existing MSWLFs that are technically comparable to the revised Federal Criteria. Second, the State/Tribe must have the authority to issue a permit or other notice of prior approval to all new and existing MSWLFs in its jurisdiction. Third, the State/Tribe must also provide for public participation in permit issuance and enforcement as required in section 7004(b) of RCRA. Fourth, the USEPA believes that the State/Tribe must show that it has sufficient compliance monitoring and enforcement authorities to take specific action against any owner or operator that fails to comply with an approved MSWLF permit program.

The USEPA Regional offices will determine whether a State/Tribe has submitted an "adequate" program based on the interpretation outlined above. The USEPA plans to provide more specific criteria for this evaluation when it proposes the STIR. The USEPA expects States/Tribes to meet all of these requirements for all elements of a MSWLF permit program before it grants full approval to a program.

B. State of Illinois

On March 31, 1993, Illinois submitted an application to obtain an adequacy determination for the State's municipal solid waste landfill permit program. On October 20, 1993, the USEPA published a tentative determination of adequacy for all portions of Illinois program. Further background information on the tentative determination of adequacy appears in 58 FR 54145, October 20, 1993. The combination of the State's existing permit program, the incorporation of certain portions of the revised Federal Criteria, and the interim period of IEPA enforcement created by Public Law 88–496, will ensure full compliance with all of the revised Federal Criteria. In its application, Illinois demonstrated that the State's permit program adequately meets the location restrictions, operating criteria, design criteria, groundwater monitoring and corrective action requirements, closure and post-closure care requirements, and financial assurance criteria in the revised Federal Criteria.

In addition, Illinois demonstrated that the State's MSWLF permit program has the authority to issue permits incorporating the requirements of the revised Federal Criteria for all MSWLFs in the State. The USEPA determined that the Illinois' permit program contains provisions for public participation, compliance monitoring, and enforcement.

The revised Federal Criteria that is incorporated into the Illinois permit program will eventually be replaced by equivalent regulations developed by the Illinois Pollution Control Board (IPCB). As previously discussed in 58 FR 54145, October 20, 1993, the USEPA has received the proposed IPCB regulations. The USEPA started its review and had

submitted comments to the IPCB. The IPCB has indicated that it will issue revised regulations in December 1993. The USEPA will continue its review when it receives the revised regulations.

Along with the tentative determination, the USEPA announced the availability of the application for public comment and the date of a public hearing on the application. The public hearing was held at the USEPA Region 5 office in Chicago, Illinois, on November 29, 1993.

The USEPA received public comment concerning the tentative determination of full program adequacy for Illinois' MSWLF permit program. One commenter asked whether the regulatory flexibility found in 40 CFR 258.50(b) would be utilized by the State. In the application, Illinois indicated that the Illinois rules do not provide for suspension of groundwater monitoring requirements by the Agency. However, an operator may petition the IPCB for an adjusted standard from the regulations of general applicability. In granting an adjusted standard from groundwater monitoring requirements, the IPCB may consider contaminant, fate, and transport requirements, as well as other factors deemed relevant. An adjusted standard must be justified and consistent with applicable Federal law, and it cannot result in environmental or health effects significantly more adverse than those considered by the IPCB in general rulemaking.

C. Decision

After reviewing the public comment, I conclude that Illinois' application for adequacy determination meets all of the statutory and regulatory requirements established by RCRA. Accordingly, Illinois is granted a determination of adequacy for all portions of its municipal solid waste permit program.

Section 4005(a) of RCRA provides that citizens may use the citizen suit provision of section 7002 of RCRA to enforce the revised Federal Criteria independent of any State/Tribal enforcement program. As the USEPA explained in the preamble to the revised Federal Criteria, the USEPA expects that any owner or operator complying with provisions in a State/Tribal program approved by the USEPA should be considered to be in compliance with the Federal Criteria. See 56 FR 50978, 50995 (October 9, 1991).

Today's action takes effect on the date of publication. The USEPA believes it has good cause under section 553(d) of the Administrative Procedures Act, 5 U.S.C. 553(d), to put this action into effect less than 30 days after publication in the **Federal Register.** All of the requirements and obligations in the State's program are already in effect as a matter of State law. The USEPA's action today does not impose any new requirements that the regulated community must begin to comply with. Nor do these requirements become enforceable by the USEPA as Federal law. Consequently, the USEPA finds that it does not need to give notice prior to making its approval effective.

Compliance With Executive Order 12866

The Office of Management and Budget has exempted this notice from the requirements of section 6 of Executive Order 12866.

Certification Under the Regulatory Flexibility Act

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this approval will not have a significant economic impact on a substantial number of small entities. It does not impose any new burdens on small entities. This notice, therefore, does not require a regulatory flexibility analysis.

Authority: This notice is issued under the authority of section 4005 of the Solid Waste Disposal Act as amended; 42 U.S.C. 6946.

Dated: December 20, 1993.

Valdus V. Adamkus,

Regional Administrator.

[FR Doc. 93–32062 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–M

[FRL–4820–6]

State of Maryland's Submission of a Substantial Program Revision to Its Authorized National Pollutant Discharge Elimination System (NYDES) Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Correction.

SUMMARY: This document contains corrections to the Maryland NPDESW substantial program modification published Wednesday, November 10, 1993. (58 FR 59724). On page 59725, in the first column under DATES, third line, the date for providing comments and/or requests for public hearing published in the **Federal Register** was December 5, 1993. In order to provide for ample opportunity to comment, the date for providing comments and/or requests for public hearing is corrected to read "thirty days from the date of this notice." EPA will continue to accept public comment and requests for public hearing for thirty days from the date of this notice.

DATES: Comments and/or requests for public hearings must be received by February 2, 1994.

ADDRESSES: Comments should be addressed to Denise Hakowski, U.S. EPA, Region III, 3WM55, 841 Chestnut Street, Philadelphia, Pennsylvania 19107.

FOR FURTHER INFORMATION CONTACT: Denise Hakowski at (215) 597–8242.

Dated: December 21, 1993.

Stanley L. Laskowski,

Acting Regional Administrator, Environmental Protection Agency, Region III.

[FR Doc. 93–32033 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–M

FEDERAL COMMUNICATIONS COMMISSION

[Gen. Docket No. 89–573; DA 93–1530]

Private Land Mobile Radio Services; Philadelphia Metropolitan Area Public Safety Plan Amendment

AGENCY: Federal Communications Commission.

ACTION: Notice.

SUMMARY: The Chief, Land Mobile and Microwave Division and the Acting Chief, Spectrum Engineering Division released this Order amending the Public Safety Radio Plan for the Philadelphia Metropolitan Area (Region 28). As a result of accepting the amendment for the Plan for Region 28, the interests of the eligible entities within the region will be furthered.

EFFECTIVE DATE: December 27, 1993.

FOR FURTHER INFORMATION CONTACT: Betty Woolford, Private Radio Bureau, Policy and Planning Branch, (202) 632–6497.

SUPPLEMENTARY INFORMATION:

Order

Adopted: December 16, 1993.

Released: December 27, 1993.

By the Chief, Land Mobile and Microwave Division and the Acting Chief, Spectrum Engineering Division:

1. The Private Radio Bureau and the Office of Engineering and Technology, acting under delegated authority, accepted the Philadelphia Metropolitan Area (Region 28) Public Safety Plan (Plan) on February 2, 1990, 5 FCC Rcd 3067 (1990).

2. By letter dated June 28, 1993, the Region proposed to amend its Plan. The proposed amendment would revise the current channel allotments. The Commission placed the letter on Public Notice for comments due on August 27, 1993, 58 FR 40818 (July 30, 1993). The

Commission received comments from the Tri-State Radio Planning Committee (Region 8) and several groups associated with it. As a result of these comments, Region 28 and Region 8 held a meeting to resolve the differences between the two regions. A new amendment was filed by Region 28 on November 3, 1993, to reflect the agreements reached as a result of the meeting between the two regions.

3. We have reviewed the proposed amendment to the Region 28 Plan and conclude it furthers the interests of the eligible entities within the Region.

4. Accordingly, it is ordered that the Public Safety Radio Plan for the Philadelphia Metropolitan Area (Region 28) is amended, as set forth in the Region's letter of June 28 and its subsequent letter of November 3, 1993. This Amendment is effective immediately.

Federal Communications Commission.

Richard J. Shiben,

Chief, Land Mobile & Microwave Division.

[FR Doc. 93–31998 Filed 12–30–93; 8:45 am]

BILLING CODE 6712–01–M

FEDERAL DEPOSIT INSURANCE CORPORATION

Privacy Act of 1974; Proposed New System of Records

AGENCY: Federal Deposit Insurance Corporation (FDIC).

ACTION: Notice of proposed system of records—"Affordable Housing Program Records System."

SUMMARY: In accordance with the Privacy Act of 1974 (5 U.S.C. 552a), the FDIC gives notice of the proposed establishment of a new system of records entitled "Affordable Housing Program Records System"

DATES: Comments on the establishment of the system must be submitted by February 11, 1994. The system will become effective February 28, 1994 unless a superseding notice to the contrary is published before that date.

ADDRESSES: Comments should be addressed to Hoyle L. Robinson, Executive Secretary, Federal Deposit Insurance Corporation, 550–17th Street, NW., Washington, DC 20429, or hand-delivered to room F–400 at 1776 F Street, NW., Washington, DC, Monday through Friday, between the hours of 9 a.m. and 5 p.m.

FOR FURTHER INFORMATION CONTACT: Frederick N. Ottie, Attorney, FDIC, 550–17th Street, NW., Washington, DC 20429, (202) 898–6679.

SUPPLEMENTARY INFORMATION: The FDIC is proposing to establish a new system of records pursuant to the Privacy Act of 1974 (5 U.S.C. 552a), entitled "Affordable Housing Program Records System". The system will consist of the purchaser's or prospective purchaser's income qualification form and substantiating documents (such as financial statements, income tax returns, assets or collateral verifications, appraisals, and sources of income); copies of sales contracts, deeds, or other recorded instruments; intra-agency forms, memoranda, or notes related to the property and purchaser's participation in the FDIC's Affordable Housing Program; correspondence; and any other documents related to the FDIC's Affordable Housing Program.

Accordingly, the Board of Directors of the FDIC proposes to establish the system to read as follows:

FDIC 30–64–0023

SYSTEM NAME:

Affordable Housing Program Records System.

SYSTEM LOCATION:

Designated FDIC service centers, regional offices, and consolidated field offices. A list of the designated locations is available from the FDIC's Division of Depositor and Asset Services, 550–17th Street, NW., Washington, DC 20429.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Purchasers and prospective purchasers of residential properties offered for sale through the FDIC's Affordable Housing Program. To be considered a prospective purchaser for purposes of this records system, the party must have (1) completed and signed an FDIC "Certification of Income Eligibility" and (2) delivered the form to an authorized representative of the FDIC's Affordable Housing Program.

CATEGORIES OF RECORDS IN THE SYSTEM:

Contains the purchaser's or prospective purchaser's income qualification form and substantiating documents (such as financial statements, income tax returns, assets or collateral verifications, appraisals, and sources of income); copies of sales contracts, deeds, or other recorded instruments; intra-agency forms, memoranda, or notes related to the property and purchaser's participation in the FDIC's Affordable Housing Program; correspondence; and any other documents related to the FDIC's Affordable Housing Program.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

Sections 9, 11, 13, and 40 of the Federal Deposit Insurance Act (12 U.S.C. 1819, 1821, 1823, 1831q).

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

Information in this system may be disclosed:

(1) To a congressional office in response to an inquiry made at the request of the individual to whom the record pertains;

(2) To a court, magistrate, or administrative tribunal in the course of presenting evidence, including disclosures to counsel or witnesses in the course of civil discovery, litigation, or settlement negotiations or in connection with criminal proceedings;

(3) To the appropriate federal, state, or local agency or authority responsible for investigating or prosecuting a violation of or for enforcing or implementing a statute, rule, regulation, or order, when the information indicates a violation or potential violation of law, whether civil, criminal, or regulatory in nature, and whether arising by general statute or particular program statute, or by regulation, rule, or order issued pursuant thereto;

(4) To persons or firms retained by the FDIC to perform services in connection with the implementation of the Affordable Housing Program such as brokers, appraisers, mortgage lenders, outside counsel, and outside consultants; and

(5) To mortgage companies, financial institutions, federal agencies (such as the Federal Housing Administration, the Farmers Home Administration, and the Veterans Administration), or state and local government housing agencies where information is relevant to an application or request for a loan, grant, financial benefit, or other type of assistance or entitlement.

DISCLOSURES TO CONSUMER REPORTING AGENCIES:

Disclosure may be made from this system pursuant to 5 U.S.C. 552a(b)(12) to "consumer reporting agencies" as defined in the Fair Credit Reporting Act (15 U.S.C. 1681a(f)) or the Federal Claims Collection Act of 1966 (31 U.S.C. 3701(a)(3)).

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Maintained on computer disks and in file folders.

RETRIEVABILITY:

Retrieved by name of purchaser or prospective purchaser of affordable housing property, and by address of the property purchased.

SAFEGUARDS:

File folders are maintained in lockable metal file cabinets. Computer disks are accessed by authorized personnel.

RETENTION AND DISPOSAL:

Affordable Housing Program files and information maintained in an online capacity are destroyed six years after termination of receivership of the closed bank from which the property was acquired if no longer needed by FDIC and in accordance with state or federal banking laws.

SYSTEM MANAGER(S) AND ADDRESS:

The appropriate FDIC regional director for records maintained in FDIC service centers and regional offices, and the appropriate FDIC bank liquidation specialist-in-charge for records maintained in consolidated field offices.

NOTIFICATION PROCEDURE:

Requests must be in writing and addressed to the Office of the Executive Secretary, FDIC, 550–17th Street, NW., Washington, DC 20429. The request must contain the purchaser's or the prospective purchaser's name and address.

RECORDS ACCESS PROCEDURES:

Same as "Notification" above.

CONTESTING RECORD PROCEDURES:

Same as "Notification" above.

RECORD SOURCE CATEGORIES:

Information is obtained principally from the individual upon whom the record is maintained; information pertaining to an individual may, in some cases, be supplemented with reports from credit bureaus and/or other services.

SYSTEMS EXEMPTED FROM CERTAIN PROVISIONS OF THE ACT:

None.

By direction of the Board of Directors.

Dated at Washington, DC, this 20th day of December 1993.

Federal Deposit Insurance Corporation.

Robert E. Feldman,

Deputy Executive Secretary.

[FR Doc. 93–32025 Filed 12–30–93; 8:45 am]

BILLING CODE 6714–01–P

FEDERAL MARITIME COMMISSION

Ocean Freight Forwarder License Revocations

Notice is hereby given that the following ocean freight forwarder licenses have been revoked by the Federal Maritime Commission 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 freight forwarders, 46 CFR part 510.

License Number: 2722
Name: Consolidated International Forwarding Co. dba CIFCO
Address: 345 W. 74th Place, Hialeah, FL 33014
Date revoked: April 24, 1993
Reason: Failed to maintain a valid surety bond.

License Number: 3114
Name: Great Bear Transportation, Inc.
Address: 10612 Shoemaker Ave., Unit B, Santa Fe Springs, CA 90670
Date revoked: July 1, 1993
Reason: Failed to maintain a valid surety bond.

License Number: 3649
Name: Worldwide Transportation International, Inc.
Address: 600 W. Hillsboro Blvd., Ste. 372, Deerfield Beach, FL 33441
Date revoked: November 22, 1993
Reason: Surrendered license voluntarily

License Number: 897
Name: Dyson Shipping Company, Inc.
Address: One World Trade Center, Ste. 1907, New York, NY 10048
Date revoked: November 30, 1993
Reason: Surrendered license voluntarily

Bryant L. VanBrakle,

Director, Bureau of Tariffs, Certification and Licensing.

[FR Doc. 93–32000 Filed 12–30–93; 8:45 am]

BILLING CODE 6730–01–M

Ocean Freight Forwarder License; Reissuance of License

Notice is hereby given that the following ocean freight forwarder license has been reissued by the Federal Maritime Commission 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 freight forwarders, 46 CFR part 510.

License No.	Name/Address	Date Reissued
2456R	Export Forwarding Company, 2213 Royal Lane, Dallas, TX 75229	December 10, 1993.

Bryant L. VanBrakle,

Director, Bureau of Tariffs, Certification and Licensing.

[FR Doc. 93–31999 Filed 12–30–93; 8:45 am]

BILLING CODE 6730–01–M

GENERAL SERVICES ADMINISTRATION

Availability of Draft Environmental Assessment; Secret Service Headquarters Building, Washington, DC

Pursuant to section 102(2)(c) of the National Environmental Policy Act of 1969, as implemented by the Council on Environmental Quality regulations (40 CFR part 1500–1508), the General Services Administration (GSA) has filed with the Environmental Protection Agency, and made available to other governmental and private bodies, a Draft Environmental Assessment (DEA) for the proposed construction of the United States Secret Service (USSS) Headquarters Building in Washington, DC.

The project proposes the construction of an approximately 461,000 gross square foot building, with associated parking. The Headquarters Building will house 1,288 employees. The USSS Headquarters currently occupies space in one Government-owned building and three leased buildings.

Written comments on the DEA may be submitted until February 7, 1994, and should be addressed to: General Services Administration, Planning Staff (WPL), room 7618, 7th & D Streets, SW., Washington, DC 20407, Attention: Sonia I. Rivera-Hersha. Additional copies of the DEA are available for public review at the following locations:

General Services Administration, Bid Room, room 1701, 7th & D Streets, SW., Washington, DC 20407.

Martin Luther King, Jr. Memorial Library, 901 G Street, NW., Washington, DC 20001.

June V. Huber,

Acting Regional Administrator.

[FR Doc. 93–32046 Filed 12–30–93; 8:45 am]

BILLING CODE 6820–23–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

Agency Information Collection Under OMB Review; Office of Child Support and Enforcement

Under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35), we have submitted to the Office of Management and Budget (OMB) a request to approve a revised questionnaire for the April 1994 Current Population Survey Supplement on Child Support. This inquiry, to be conducted by the Census Bureau, is sponsored by the Office of Child Support Enforcement (OCSE) of the U.S. Department of Health and Human Services.

The Administration for Children and Families is requesting an expedited review by the Office of Management and Budget in order to have the questionnaire available in time for the April 1994 survey. Therefore, as prescribed by the Federal Paperwork Reduction Act of 1980, Office on Management and Budget's Regulations and the Department of Health and Human Services IRM Circular #15 issued on September 14, 1992 for expedited review of information collections activities, we are including in this notice the entire information collection materials for review by the general public.

The following is a copy of the package in its entirety. Written comments and questions regarding the requested approval for information collection should be sent by January 31, 1994, directly to: Laura Oliven, OMB Desk Officer for ACF, OMB Reports Management Branch, New Executive Office Building, room 3002, 725 17th Street, NW., Washington, DC 20503, (202) 395–7316.

Information on Document

Title: April 1994 Current Population Survey Supplement on Child Support.

OMB No.: 0992–0272.

Description: This collection of information is authorized by Title IV–D of the Social Security Act. An Office of Management and Budget letter dated July 1, 1983, also directs the Office of Child Support Enforcement to collect this information. OMB previously approved this data collection under OMB approval number 0992–0272.

The Survey of Child Support is designated to obtain information on the characteristics of individuals eligible to receive child support and the types of financial arrangements made to assist in the support of such individuals and any children for whom they retain custody. These data will assist legislators and policymakers in determining how effective their policy making efforts have been over time in applying the various child support legislation to the overall child support enforcement picture.

Survey Instrument: 1994 CHILD SUPPORT SUPPLEMENT, OMB No. 0992–0272, Expires:

All items in the instrument have a blind Don't Know and Refusal option.

UNIVERSE QUESTIONS TO DETERMINE ELIGIBILITY

(102 is asked of Married respondents)

102. This month we are also asking questions about children who do not live with both of their parents. I have listed that (NAMES OF CHILDREN) are all under the age of 21. Which of these children, IF ANY have a (father/mother/father or mother) who lives outside of this house?

SCREEN SHOWS ROSTER OF CHILDREN. ENTER LINE NUMBERS OF CHILDREN

<N> for None, No More, Parent temporarily absent GO TO 104

(103a is asked of Never Married, Divorced, Widowed, and Separated respondents)

103a. Does (Child) have a (father/mother) who lives outside this household?

Yes GO TO 104

No

103b. There are many reasons why children may not live with both of their biological or adoptive parents. Why doesn't (CHILD) have a biological or adoptive (mother/father) living outside the household?

Other parent has died	1 END
Child was adopted by a single parent.	2 END
Other parent terminated their parental rights.	3 END
Other parent is living in the household.	4 END
Other parent is no longer recognized as a parent by this household.	5
Other (Specify)_____	6

103c. Did (Child's) (mother/father) ever have any type of child support agreement or ever attempt to have any type of child support agreement with (Child's) (mother/father)?

Yes

No END

104. (Are you/Which of the adults in this household is) LEGALLY responsible for CHILD?

Enter Liner Number_____

or <N> for None ____ GO TO 104b

104a. What is (Name for adult from Q104)'s relationship to (CHILD)?

Grandparent	1 END INTERVIEW
Aunt or Uncle	2 END INTERVIEW
Sister or Brother	3 END INTERVIEW
Foster Parent	4 END INTERVIEW
Parent	5
Other (Specify) _____	6 END INTERVIEW

104b. What is (REFERENCE PERSON's) relationship to (CHILD)?

Grandparent	1 END INTERVIEW
Aunt or Uncle	2 END INTERVIEW
Sister or Brother	3 END INTERVIEW
Foster Parent	4 END INTERVIEW
Parent	5
Other (Specify) _____	6 END INTERVIEW

(105–108 are asked or married respondents)

105. Are you CHILD's natural biological (mother/father)?

Yes GO TO 107

No GO TO 105

106. Did you ever legally adopt CHILD?

Yes

No

107. Is (NAME OF MOTHER/FATHER) CHILD's natural biological (mother/father)?

Yes GO TO 150

No GO TO 108

108. Did (NAME OF MOTHER/FATHER) ever legally adopt (CHILD)?

Yes

No

SECTION 1—ROSTER OF CHILD SUPPORT ARRANGEMENTS

Lead-in. A *legal* arrangement about financial support for a child could be called many things, for example, a court order, a court award, a divorce or separation agreement, or a legal agreement.

150. Has there *ever* been *any* kind of *legal arrangement* that says that (CHILD)'s (father/mother) should provide *any kind* of financial support for (him/her)?

Yes GO TO 151
No GO TO 152
Legal arrangement pending GO TO 154
There is an arrangement, but R does not know if it is legal GO TO 153

151. Would you call it a court order, a court award, or a legal agreement?
Court order GO TO 154
Court award GO TO 154
Legal agreement GO TO 154

152. Has there *ever* been any *other* kind of agreement or understanding that says that (CHILD)'s (father/mother) should help support (him/her)?
Yes
No

153. Would you call it an agreement or an understanding?
Agreement
Understanding

154. Payments that are made for the support of a child are called child support, even if there is no legal agreement.
Did this agreement ever say that (CHILD)'s (father/mother) should make child support payments?
Yes
No

156. Which of your other children were *ever* covered by the *same* agreement?
SCREEN SHOWS ROSTER OF CHILDREN, ENTER LINE NUMBERS OF CHILDREN
<N> for None, No More, Parent temporarily absent

SECTION 2—HISTORY OF MOST RECENT AGREEMENT

249. I am going to ask you questions about (NAME ALL COVER CHILDREN).
251. An agreement about child support can be made legal by going through a court, before a judge, or through an official legal process.
Was this agreement about child support payments for (NAME ALL COVERED CHILDREN) *ever* made legal?
Yes GO TO 258
No

253. In what year did you *first* (have this agreement/have this understanding)?
19 _____

255. And in what year was (the children's) (father/mother) supposed to begin making child support payments?
19 _____

257. What month was that? _____
258. Some parents agree to the amount of child support before making the agreement legal.
Did you and the (children's) (father/mother) do this?
Yes
No

259. In what year was the (agreement) *first* made *legal*?
19 _____

261. And in what year was the children's (father/mother) supposed to begin making child support payments?
19 _____

263. What month was that? _____
266. Since the (agreement) was *first* made legal, has there been a change in the amount of child support that (the children's) (father/mother) is *legally required* to pay?
Yes 1
No ..... 2 GO TO 271
Yes, but don't know if it is legal. 3

267. Did the amount change because a child was too old to receive support?
Yes
No

268. In what year was (the children's) (father/mother) supposed to begin paying the new amount?
PROBE IF NEEDED: For the most recent legal change.
19 _____

270. What month was that? _____
271. Have you and (the children's) (father/mother) ever *agreed* to change the amount of child support that (he/she) is supposed to pay (*without* going through a judge or legal process)?
Yes
No GO TO 300

273. In what year was (the children's) (father/mother) supposed to begin paying the new amount?
PROBE IF NEEDED: The last time this happened.
19 _____

275. What month was that? _____

SECTION 3A—SUPPORT AGREEMENT AND BEHAVIOR PREVIOUS CALENDAR YEAR

300. The next questions ask about the (agreement about) child support for (NAME ALL COVERED CHILDREN). The questions ask about what was supposed to happen, even if the (agreement) was not followed exactly.
Between January 1 and December 31, 1992, was (the children's) (father/mother) *supposed to* make *any* child support payments for (any of them)?
Yes ..... 1 GO TO 302
No 2
Yes, if he has a job. 3 GO TO 302
DK because Child Support Enforcement Office filed the paper work 4

301. Why was that?
Child(ren) too old in 1992. 1 GO TO 340
Other parent died before 1992. 2 END INTERVIEW
Family lived together in all or part of 1992. 3 GO TO 375
Child(ren) lived with other parent in all or part of 1992. 4 GO TO 375
Other (Specify) _____. 5 GO TO 375

302. During 1992, were any of the child support payments *supposed to* be deducted from (his/her) paycheck?
Yes
No

303. And during 1992, were any of these payments *supposed* to be sent to you (READ ALL CATEGORIES):
PROBE IF NEEDED: For most of 1992.
By a child support, welfare or other public agency 1
By a court 2
or did the payments come directly from (him/her) (or (his/her) place of employment)? 3
Other (Specify) _____ 4

306. The following questions ask about the child support (the children's) (father/mother) was *supposed to* pay, whether or not you received it. During 1992, how often was (he/she) *supposed to* make these payments?
PROBE IF NEEDED: Would that be every week, every month, or some other way?
Every week 1 GO TO 312
Every other week 2 GO TO 312
Twice a month 3 GO TO 312
Every month or Monthly 4 GO TO 312
Every quarter 5 GO TO 312
For the year 6 GO TO 312
Other (Specify) _____ 7 GO TO 314

312. Sometimes child support that was not paid in previous years is added to the amount of support owed today. This is called back support. Did the amount that (the children's) (father/mother) was supposed to pay in 1992 include back support?

Yes
No

313. (How) much was (the weekly) payment for (NAME ALL COVERED CHILDREN) supposed to be, during 1992?

ENTER AMOUNT $_____.00
OTHER (Specify) _____

314. Sometimes child support that was not paid in previous years is added to the amount of support owed today. This is called back support. Did the amount that (the children's) (father/mother) was supposed to pay in 1992 include back support?

Yes
No

315. About how much altogether was (he/she) *supposed to* pay for (NAME ALL COVERED CHILDREN) during 1992?

ENTER AMOUNT $_____ .00
OTHER (Specify) _____ GO TO 326

316. The following questions ask about the child support (CHILD/the children's) (father/mother) was *supposed* to pay, whether or not you received it. (Before the change was made in 1992, how often was (he/she) *supposed to* make these payments?

PROBE IF NEEDED: Would that be every week, every month, or some other way?

Every week	1	
Every other week	2	
Twice a month	3	
Every month or monthly	4	
Every quarter	5	
For the year	6	
None	7	
Other (Specify) _____	8	GO TO 319

317 Sometimes child support that was not paid in previous years is added to the amount of support owed today. This is called back support. Did the amount that (the children's) (father/mother) was supposed to pay (before the change was made in 1992 include back support?

Yes
No

318. (Before was made, how much was (the weekly) payment for (NAME ALL COVERED CHILDREN) *supposed* to be?

ENTER AMOUNT $_____.00	GO TO 321 or 325b
AMOUNT VARIED	GO TO 320
OTHER (Specify) _____	GO TO 320

319. Sometimes child support that was not paid in previous years is added to the amount of support owed today. This is called back support. Did the amount that (the childrens's) (father/mother) was supposed to pay (before the change from in 1992 include back support?

Yes
No

320. About how much *altogether* was (he/she) *supposed to* pay for (NAME ALL COVERED CHILDREN) before the change was made in 1992?

ENTER AMOUNT $_____.00
OTHER (Specify) _____

321. Next, (after the change was made in through December) 1992, how often was (the children's) (father/mother) *supposed to* make these payments?

PROBE IF NEEDED: Would that be every week, every month, or some other way?

Every week	1	
Every other week	2	
Twice a month	3	
Every month or monthly	4	
Every quarter	5	
For the year	6	
None	7	GO TO 326
Other (Specify) _____	8	GO TO 324

322. Did the amount that (he/she) was supposed to pay (after the change was made in 1992 include back support?

Yes
No

323. (After the change was made), how much was (the weekly) payment for (NAME ALL COVERED CHILDREN) *supposed to* be)?

ENTER AMOUNT $_____.00
OTHER (Specify) _____ GO TO 326

324. Did the amount that (the children's) (father/mother) was supposed to pay (after the change was made in 1992 include back support?

Yes
No

325. About how much *altogether* was (he/she) *supposed to* pay for (NAME ALL COVERED CHILDREN) (after the change was made in) 1992?

ENTER AMOUNT $_____.00
OTHER (Specify) _____

325b. Altogether, you were supposed to receive (X$ from output variable) during 1992. Is that correct?

Yes
No

325c. (About) how much altogether was (he/she) *supposed to* pay for (NAME ALL COVERED CHILDREN) during 1992?

ENTER AMOUNT $_____.00
OTHER (Specify) _____

326. Someone receiving A.F.D.C. may get up to $50 of child support each month in addition to A.F.D.C.. This money is sometimes called a bonus or a pass through. This child support bonus may come with an A.F.D.C. check or in a separate check.

Between January 1 and December 31, 1992, was *any* child support passed on to you by A.F.D.C. for (NAME ALL COVERED CHILDREN)?

Yes	1
No	2
No, I was not on A.F.D.C. in 1992	3
Other (Specify) _____	4

327. (The next questions ask about the amount of child support you received during 1992. Please include any child support forwarded to you by a court, or a child support enforcement agency, and any payments made directly to you. Between) January 1 and December 31, 1992, did you *actually* receive *any* child support payments—even one—for (NAME ALL COVERED CHILDREN)?

Yes	1	IF 326=1, GO TO 333, ELSE GO TO 340
No	2	IF 326=1, GO TO 333, ELSE GO TO 340
Other (Specify) _____.	3	IF 326=1, GO TO 333, ELSE GO TO 340

328. In 1992, did you receive *every single one* of the child support payments you were supposed to receive for (the children)?

Yes
No

329. Of the child support payments you received in 1992, how many of them were received *on time*. Would you say all of them were on time, most of them, some of them or none of them?

All	1
Most	2
Some	3
None	4

330. And of the child support payments you received, how many of them were for the *full* amount you were supposed to receive? Would you say all of them, most of them, some of them, or none of them?

All	1
Most	2
Some	3
None	4

331. So you received ($ from 313) (every week) for (NAME ALL COVERED CHILDREN) in 1992. Is this correct?

Yes GO TO 340
No

332. How much child support did you actually receive *altogether* in 1992 for (the children)?

ENTER AMOUNT $_____ ALL
SKIP TO 340

333. The next questions ask about the amount of child support you received between January 1 and December 31, 1993. (Please include any back support and any child support passed through the welfare agency in addition to you regular A.F.D.C. payment.)

How much child support did you actually receive *altogether* in 1992 for (NAME ALL COVERED CHILDREN)?

ENTER AMOUNT $_____

334. So you received (Total amount from 333) dollars *altogether* in 1992. Is this correct?

Yes SKIP TO 340
No

335. What is the correct amount of child support you *actually* received in 1992?

ENTER AMOUNT $_____

340. The next questions are about health insurance.

Does the child support (agreement) say who is supposed to provide health insurance for (NAME ALL COVERED CHILDREN)?

Yes
No SKIP TO 342

341 According to the (agreement), who was *supposed to* provide health insurance for (NAME ALL COVERED CHILDREN)?

Respondent for all children ... 1
Other parent for all children .. 2
Both parents for all children .. 3
Parents each cover different children 4
Not specified in the award 5
DK—because the Child Support Enforcement Office filed the paper work 6
Other _____

342. During 1992, did (the children's) father/mother) *actually have* health insurance that covered (the children)—through an HMO, a regular insurance policy, or some other plan?

PROBE: FOR MOST OF 1992
Yes GO TO 400
No GO TO 400

343. Someone receiving A.F.D.C. may get up to $50 for child support each month in addition to A.F.D.C.. This money is sometimes called a bonus or a pass through. This child support bonus may come with an A.F.D.C. check or in a separate check.

Between January 1 and December 31, 1992, was *any* child support passed on to you by A.F.D.C. for (CHILD)?

Yes 1
No 2
No, Not on A.F.D.C. 3
Other (Specify) _____ 4

344. (The next questions ask about the amount of child support you received during 1992. Please include any child support forwarded to you by a court, or a child support enforcement agency, and any payments made directly to you. Between) January 1 and December 31, 1992, did you *actually* receive *any* child support payments—even one—for (CHILD)?

Yes 1
No ..... 2 IF 341=1 GO TO 345, ELSE GO TO 355
Other (Specify) 3 GO TO 355
_____.

345. How much child support did you actually receive *altogether* in 1992 for (CHILD)?

ENTER AMOUNT $_____

346. So you received ($ from 345) dollars *altogether* in 1992. Is this correct?

Yes 1 SKIP TO 355
No 2

347. What is the correct amount of child support you *actually* received in 1992?

ENTER AMOUNT $_____

348. The next question is about health insurance.

During 1992, did (CHILD)'s (father/mother) *actually have* health insurance that covered (CHILD)—through an HMO, a regular insurance policy, or some other plan?

PROBE: FOR MOST OF 1992?

Yes GO TO 376
No GO TO 376

SECTION 3B—REASON FOR NO LEGAL AGREEMENT

376. YOUNGEST CHILD ON ROSTER IS REFERENCE CHILD.

Is there a legal agreement about child support for (CHILD) pending now?

Yes 1 GO TO 400
No 2
DK Because Child Enforcement Office or A.F.D.C. Office may have filed papers 3

377. Here are some reasons a parent might not have a legal arrangement about child support. Please tell me which of these reasons describe why *you* do *not* have a legal arrangement about child support for (CHILD).

PROBE: Was that a reason you did not have a legal arrangement about child support?

	YES	NO	DK	REF
A. Did you not have a child support order because (IF AGE CHILD > 17) (CHILD) was too old for child support.	1	2	3	4
B. Did you not have a child support order because (CHILD) stays with (his/her) (father/mother) part of the time.	1	2	3	4
C. Did you not have a child support order because (CHILD)'S (father/mother) provides what (he/she) can.	1	2	3	4
D. Did you not have a child support order because you did not feel the need to get legal, that is go to court.	1	2	3	4
E. Did you not have a child support order because you did not want (CHILD) or yourself to have contact with (CHILD)'s (father/mother).	1	2	3	4
F. Did you not have a child support order because you did not want (Child)'s (father/mother) to pay child support.				
G. Did you not have a child support order because (CHILD)'s (father/mother) could not afford to pay child support.	1	2	3	4
H. Did you not have a child support order because (IF R=FEMALE) you did not have a legal ruling about who the father was, that is you did not legally establish paternity.	1	2	3	4
I. Did you not have a child support order because you could not locate (CHILD)'s (father/mother).	1	2	3	4

378. Why did you not have a legal agreement about child support for (CHILD)?

FIELD CODE OTHERS

Other parent in jail/prison	1	GO TO 400
Other parent died before 1992	2	END INTERVIEW
Other parent lives in another country	3	GO TO 400
Split custody	4	GO TO 400
Respondent able to support the child	5	GO TO 400
Recently separated	6	GO TO 400
Other (Specify)_____	7	GO TO 400

379. Other than the reasons you have already told me about, was there any other reason you did not have a legal agreement or court order about child support for (CHILD)?

Yes

No GO TO 400

380. What was that?

FIELD CODE OTHERS

Other parent in jail/prison	1	GO TO 400
Other parent died before 1992	2	END INTERVIEW
Other parent lives in another country	3	GO TO 400
Split custody	4	GO TO 400
Respondent able to support the child	5	GO TO 400
Recently separated	6	GO TO 400
Other (Specify)_____	7	GO TO 400

SECTION 4—HELP GETTING SUPPORT

400. Have you ever contacted a child support enforcement or 4D office, a department of social services, a welfare office, or any state or local government agency about anything to do with child support?

Yes GO TO 402

No

401. Have you ever *been contacted by* one of these agencies about anything to do with child support?

Yes

No IF 400–1 GO TO 402, ELSE GO TO 406

402. Which of the following things did you have contact about:

	YES	NO	DK	REF
A. Were you in contact about finding the other parent	1	2	3	4
B. Were you in contact about (IF R=FEMALE) getting a legal ruling about who the father is, that is establishing paternity.	1	2	3	4
C. Were you in contact about getting a *legal* agreement or court award for the other parent to pay child support.	1	2	3	4
D. Were you in contact about collecting child support that the other parent owed	1	2	3	4
E. Were you in contact about changing the amount of child support the other parent was legally required to pay.	1	2	3	4
F. Were you in contact about getting an agreement for the other parent to provide health insurance.	1	2	3	4
G. Were you in contact about getting A.F.D.C. or Medicaid	1	2	3	4

405. In what year did you last have contact with one of these agencies?

19_____

406. Next, thinking about the government programs that help families with children, between January 1 and December 31, 1992:

	YES	NO	DK	REF
A. Did you have Medicaid or any other state provided health insurance coverage at any time?	1	2	3	4
B. Did you receive any food stamps?	1	2	3	4
C. Did you receive any A.F.D.C. or A.D.C. payments?	1	2	3	4

SECTION 5—AGREEMENT ABOUT CUSTODY AND VISITATION

501. The next questions are about the relationship between (CHILD) and (his/her) (father/mother).

Does (CHILD)'s (father/mother) have visitation privileges?

Yes

No GO TO 503

502. Did you ever go to court, before a judge, or through a legal process to make the visitation privileges legal?

Yes

No

503. Sometimes children live with each parent for part of the time. This is called joint physical custody.

Did a court or judge *ever* give you and (CHILD)'s (father/mother) joint *physical* custody?

Yes

No

504. Joint legal custody of a child means that both parents have the right to help make decisions about the child

Did a court or judge *ever* give you and (CHILD)'s (father/mother) joint *legal* custody?

Yes

No

SECTION 6—PARENT-CHILD CONTACT

601. Did you and (CHILD)'s (father/mother) live in the same state during 1992?

PROBE IF NEEDED: As far as you know, did you live in the same state during *most of* 1992?

Yes GO TO 603

No

602. In what state did (CHILD)'s (father/mother) live during 1992?

PROBE IF NEEDED: Where did (he/she) live during most of 1992?

ENTER NAME OF STATE _____

Outside of the United States

603. Did either you or (CHILD) have *any kind* of contact *at all* with (CHILD)'s (father/mother) during 1992?

Yes
No GO TO 700

604. Did (CHILD) spend time with (his/her) (father/mother) on at least one day in 1992?

Yes
No SKIP TO 611

605. Including birthdays, holidays and vacation days, between January 1, 1992 and December 31, 1992, *on* how many days altogether did (CHILD) spend time with (his/her) (father/mother)?

PROBE IF NEEDED: ON HOW MANY DAYS EACH WEEKEND WAS THAT, WOULD THAT BE FRIDAY, SATURDAY AND SUNDAY?

_____

611. (Other than the child support you told me about, between) January 1 and December 31, 1992 did (the children's) (father/mother) do any of the following for (NAME ALL COVERED CHILDREN):

	YES	NO	DK	REF
A. Give any birthday, holiday or other gifts to (CHILD/the children	1	2	3	4
B. Provide clothes (IF REFERENCE CHILD OR ANY CHILD W/ AGREE = 1 has AGE <4, diapers,) or shoes for (NAME ALL COVERED CHILDREN).	1	2	3	4
C. Provide food or groceries REFERENCE CHILD OR ANY CHILD W/ AGREE = 1 has AGE < 2 or formula) for (NAME ALL COVERED CHILDREN.	1	2	3	4
D. Pay for child care or summer camp	1	2	3	4
E. Pay for medical expenses, such as medicine or visits to the doctor or dentist, other than health insurance.	1	2	3	4

SECTION 7—BACKGROUND QUESTIONS

700. CHECK ITEM: Current martial status?

Never Married ..	1 END INTERVIEW
Currently Married.	2 GO TO 701
Divorced	3 GO TO 702
Separated	4 GO TO 703
Widowed	5 GO TO 704

701. Last, I have a couple of background questions. Have you been married before or is your current marriage your first marriage?

Married before ..	1 GO TO 705
First marriage ...	2 GO TO 720
Other _____	3 END INTERVIEW

702. Last, I have a couple of background questions. Have you been married more than once?

Yes GO TO 705
No GO TO 705

703. Last, I have a couple background questions. In what year did your separation take place?

19 _____ GO TO 706

704. Last, I have a couple of background questions. Have you ever been divorced?

Yes, divorced	1 GO TO 705
No	3 END INTERVIEW

705. In what year did your (most recent) (divorce) take place?

19_____

706. What was the year of that marriage

19_____

707. At the time you separated, were you working?

Yes GO TO 708
No GO TO 709

708. Were you working 35 hours or more per week or less than 35 hours per week?

35 hours or more.	1 GO TO 710
Less than 35 hours.	2 GO TO 710

709. Did you work at any time during the five years before your last separation?

Yes GO TO 710
No GO TO 701

710. CHECK ITEM:

Total Number of kids in household:

One	1 GO TO 711
Other	2 GO TO 710

711. Is (CHILD) from (the marriage before this one)?

Yes	1 END INTERVIEW
No	2 END INTERVIEW

712. Which of your children living here are from (the marriage before this one)?

None END INTERVIEW
All END INTERVIEW

Annual Number of Respondents: 56,000.

Annual Frequency: 1.

Average Burden Hours per Response: .0241.

Burden Hours: 1,350.

Dated: December 22, 1993.

Larry Guerrero,

Deputy Director, Office of Information Systems Management.

[FR Doc. 93–31968 Filed 12–30–93; 8:45 am]

BILLING CODE 4184–01–M

INTERSTATE COMMERCE COMMISSION

Intent To Engage In Compensated Intercorporate Hauling Operations

This is to provide notice as required by 49 U.S.C. 10524(b)(1) that the named corporations intend to provide or use compensated intercorporate hauling operations as authorized in 49 U.S.C. 10524(b).

Parent Corporation

Inland Container Corporation, Delaware, 4030 Vincennes Road, Indianapolis, IN 46268–0937.

Wholly Owned Subsidiaries Which Will Participate in the Operations and States of Incorporation

Crockett Container Corporations, California

El Morro Corrugated Box Corporation, Delaware

El Morro Corrugated Box Corporation, Puerto Rico

Georgia Kraft Company, Delaware

Inland Container Corporation Foundation, Inc., Indiana

Inland Container FSC, Inc., United States Virgin Islands

Inland Corrugados de Mexico, S.A. de C.V., Mexico City, D.F.

Inland de Mexico Holding Co., S.A. de C.V., Mexico City, D.F.

Inland International Holding Company, Delaware

Inland Paper Company, Inc., Indiana

Inland Real Estate Investments, Inc., Indiana

King Container Company, California

Pakway Container Corporation, Indiana

Sabine River & Northern Railroad Company, Texas

Sidney L. Strickland, Jr.,

Secretary.

[FR Doc. 93–32045 Filed 12–30–93; 8:45 am]

BILLING CODE 7035–01–M

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

Controlled Substances: Established 1994 Aggregate Production Quota

AGENCY: Drug Enforcement Administration, DOJ.

ACTION: Notice of established 1994 aggregate production quotas.

SUMMARY: This notice establishes 1994 aggregate production quotas for controlled substances in Schedule I of the Controlled Substances Act.

DATE: This order is effective January 3, 1994.

FOR FURTHER INFORMATION CONTACT: Howard McClain, Jr., Chief, Drug & Chemical Evaluation Section, Drug Enforcement Administration, Washington, DC 20537, Telephone: (202) 307–7183.

SUPPLEMENTARY INFORMATION: Section 306 of the Controlled Substances Act (CSA) (21 U.S.C. 826) requires that the Attorney General establish aggregate production quotas for all controlled substances in Schedule I and II each year. This responsibility has been delegated to the Administrator of the DEA pursuant to § 0.100 of Title 28 of the Code of Federal Regulations.

On October 8, 1993, a notice of the proposed 1994 aggregate production quotas for certain Schedule I controlled substances was published in the **Federal Register** (58 FR 52510). All interested persons were invited to comment on or object to these proposed aggregate production quotas on or before November 8, 1993. No comments or objections were received.

This notice is not a significant regulatory action and therefore has not been reviewed by the Office of Management and Budget pursuant to Executive Order 12866.

This action has been analyzed in accordance with the principles and criteria contained in the Executive Order 12612 and it has been determined that this matter does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The Administrator hereby certifies that this matter will have no significant impact upon small entities within the meaning of and intent of the Regulatory Flexibility Act, 5 U.S.C. 601 et seq. The establishment of annual production quotas for Schedules I and II controlled substances is mandated by law and by the international commitments of the United States. Such quotas impact predominantly upon major manufacturers of the affected controlled substances.

Therefore, under the authority vested in the Attorney General by section 306 of the Controlled Substances Act of 1970 (21 U.S.C. 826) and delegated to the Administrator by § 0.100 of title 28 of the Code of Federal Regulations, the Administrator of the DEA hereby establishes the 1994 aggregate production quotas for the following controlled substances, expressed in grams of anhydrous base, be established as follows:

Basic class	Established 1994 quotas (in grams)
4-Methoxyamphetamine	10
3-Methylfentanyl	10
Cathinone	2

Dated: December 22, 1993.

Stephen H. Greene,

Acting Administrator of Drug Enforcement.

[FR Doc. 93–32003 Filed 12–30–93; 8:45 am]

BILLING CODE 4410–09–M

DEPARTMENT OF LABOR

Office of the Secretary

Glass Ceiling Commission; Open Meeting

SUMMARY: Pursuant to Title II of the Civil Rights Act of 1991 (Pub. L. 102–166) and section 9 of the Federal Advisory Committee Act (FACA) (Pub. L. 92–462, 5 U.S.C. app. II) a Notice of establishment of the Glass Ceiling Commission was published in the **Federal Register** on March 30, 1992 (57 FR 10776). Pursuant to section 10(a) of FACA, this is to announce a meeting of the Commission which is to take place on Thursday, February 10, 1994. The purpose of the Commission is to, among other things, focus greater attention on the importance of eliminating artificial barriers to the advancement of minorities and women to management and decisionmaking positions in business. The Commission has the practical task of:

(a) Conducting basic research into practices, policies, and manner in which management and decisionmaking positions in business are filled;

(b) Conducting comparative research of businesses and industries in which minorities and women are promoted or are not promoted to management and decisionmaking positions; and

(c) Recommending measures designed to enhance opportunities for and the elimination of artificial barriers to the advancement of minorities and women to management and decisionmaking positions.

Time and place: The meeting will be held on Thursday, February 10, 1994 from 3 p.m. until 6 p.m. at the Hotel InterContinental, 251 S. Olive Street, Los Angeles, California 90012.

Agenda: The agenda for the meeting is as follows: Introduction of Commissioners, Review of Hearing Agenda, Review Briefing Book, Discussion of Rules of Procedure, Report on Research, Discussion of Perkins-Dole Award, Discussion of Final Report.

There will be a 15 minute break in the meeting between 4:30 p.m. and 4:45 p.m.

Public participation: The meeting will be open to the public. Seating will be available on a first-come, first-served basis. Seats will be reserved for the media. Disabled individuals should contact the Commission no later than February 1, 1994, if special accommodations are needed. Individuals or organizations wishing to submit written statements should send twenty (20) copies to Ms. Joyce D. Miller, Executive Director, Glass Ceiling Commission, U.S. Department of Labor, 200 Constitution Avenue, NW., room S–2233, Washington, DC 20210, postmarked no later than February 1, 1994.

For further information contact: Ms. Joyce D. Miller, Executive Director, Glass Ceiling Commission, U.S. Department of Labor, 200 Constitution Avenue, NW., room S–2233, Washington, DC 20210, (202) 219–7342.

Signed at Washington, DC, this 27th day of December 1993.

Robert B. Reich,

Secretary of Labor.

[FR Doc. 93–32083 Filed 12–30–93; 8:45 am]

BILLING CODE 4510–23–M

Glass Ceiling Commission; Open Site Hearing

SUMMARY: Pursuant to title II of the Civil Rights Act of 1991 (Pub. L. 1-2–166) and section 9 of the Federal Advisory Committee Act (FACA) (Pub. L. 92–462, 5 U.S.C. app. II) a Notice of establishment of the Glass Ceiling Commission was published in the **Federal Register** on March 30, 1992 (57 FR 10776). Pursuant to section 10(a) of FACA, this is to announce a public hearing of the Commission which is to take place on Friday, February 11, 1994. The purpose of the Commission is to, among other things, focus greater attention on the importance of eliminating artificial barriers to the advancement of minorities and women to management and decisionmaking positions in business. The Commission has the practical task of:

(a) Conducting basic research into practices, policies, and manner in which management and decisionmaking positions in business are filled;

(b) Conducting comparative research of businesses and industries in which minorities and women are promoted or are not promoted to management and decisionmaking positions; and

(c) Recommending measures designed to enhance opportunities for and the elimination of artificial barriers to the advancement of minorities and women to management and decisionmaking positions.

Time and place: The hearing will be held on Friday, February 11, 1994 from 8 a.m. until 6 p.m. in the Los Angeles County Board of Supervisors Hearing Room, room 381B, Kenneth Hahn Hall of Administration, 500 West Temple Street, (Corner of Temple and Grand), Los Angeles, California 90012.

Issues: Testimony should highlight successful initiatives and/or recommendations for addressing the areas discussed below. The Commission is especially interested in hearing about procedures, practices and systems that have been put in place to make sure that goals are achieved in work force diversity.

Recruitment: What systems are in place to ensure that external recruiting for decisionmaking positions will produce a pool of applicants which provides opportunities for minorities and women? Similarly, does the process for considering promotion of current employees to decisionmaking positions ensure consideration of minorities and women?

Developmental practices and credential building experiences: How are minorities and women ensured that they will be given the kinds of experiences that will make them competitive for decisionmaking positions, including not only advanced education, but also developmental assignments such as to corporate committees and task forces, special projects, etc.

Accountability for equal employment opportunity responsibilities: How are senior level executives, line managers, and corporate decision makers held accountable for EEO responsibilities?

Compensation systems: How is the total compensation package including bonuses, stock options and other incentives evaluated for fairness for minorities and women? How is the appraisal system/performance rating system protected from subjective decisions which impact compensation? Do management and supervisory compensation systems depend upon or reward managers' achieving work force diversity goals, and, if so, how does that work?

Placement patterns: What kind of monitoring is done to ensure that minorities and women are placed in the line positions that will provide better opportunity for promotion to decisionmaking positions?

Testimony on successful initiatives may include discussion on the elements above and how other factors are combined to create a complete initiative resulting in the advancement of minorities and women.

Agenda: The agenda for the meeting is as follows:

8 a.m. Introduction of Commissioners
8:30 a.m. Welcome by government officials
8:45 a.m. Witnesses
12 Noon Lunch break
1:30–4 p.m. Witnesses
4:30 p.m. Open microphone session

Public participation: The hearing will be open to the public. Seating will be available on a first-come, first-serve basis. Seats will be reserved for the media. Disabled individuals should contact the Commission no later than February 1, 1994, if special accommodations are needed.

Individuals or organizations wishing to testify orally must provide written testimony or an executive summary of testimony in advance of the hearing. Send Twenty (20) copies, postmarked on or before January 25, 1994, to: Ms. Joyce D. Miller, Executive Director, Glass Ceiling Commission, U.S. Department of Labor, 200 Constitution Avenue NW., room S–2233, Washington, DC 20210.

The written testimony must contain the following information:

(1) The name, address, and telephone number of each person to appear;

(2) The capacity in which the person will appear;

(3) The approximate amount of time requested for presentation;

(4) The issues that will be addressed.

(5) Twenty (20) copies of testimony or executive summary. (Written material may be longer in length than oral comments.)

As many people as time allows will be permitted to testify. The amount of time requested for each presentation will be reviewed in light of the number of persons or groups wishing to appear. To provide all interested parties an opportunity to present their views, the Glass Ceiling Commission may impose an appropriate time restriction for each presentation or limit presentations to only one person for an organization or group.

A videotape may be made of the hearing, and minutes of the hearing will be taken.

Materials submitted at this hearing should not be submitted at any subsequent Glass Ceiling Commission hearings.

Those individuals or organizations wishing to submit written statements, but not testify orally, should send twenty (20) copies to Ms. Joyce D. Miller, Executive Director, Glass Ceiling Commission, U.S. Department of Labor, 200 Constitution Avenue NW., room S–2233, Washington, DC 20210. Written statements should be postmarked on or before January 25, 1994.

FOR FURTHER INFORMATION CONTACT: Ms. Joyce D. Miller, Executive Director, Glass Ceiling Commission, U.S. Department of Labor, 200 Constitution Avenue NW., room S–2233, Washington, DC 20210, (202) 219–7342.

Signed at Washington, DC, this 27th day of December 1993.

Robert B. Reich,

Secretary of Labor.

[FR Doc. 93–32081 Filed 12–30–93; 8:45 am]

BILLING CODE 4510–23–M

Employment Standards Administration

Minimum Wages for Federal and Federally Assisted Construction; General Wage Determination Decisions

General wage determination decisions of the Secretary of Labor are issued in accordance with applicable law and are based on the information obtained by the Department of Labor from its study of local wage conditions and data made available from other sources. They specify the basic hourly wage rates and fringe benefits which are determined to be prevailing for the described classes of laborers and mechanics employed on construction projects of a similar character and in the localities specified therein.

The determinations in these decisions of prevailing rates and fringe benefits have been made in accordance with 29 CFR part 1, by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR part 1, appendix, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act. The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public comment procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in the effective date as prescribed in that section, because the necessity to issue current construction industry wage determinations frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General wage determination decisions, and modifications and supersedeas decisions thereto, contain no expiration dates and are effective from their date of notice in the Federal Register, or on the date written notice is received by the agency, whichever is earlier. These decisions are to be used in accordance with the provisions of 29 CFR parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a

part of every contract for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR part 5. The wage rates and fringe benefits, notice of which is published herein, and which are contained in the Government Printing Office (GPO) document entitled "General Wage Determinations Issued Under the Davis-Bacon And Related Acts," shall be the minimum paid by contractors and subcontractors to laborers and mechanics.

Any person, organization, or governmental agency having an interest in the rates determined as prevailing is encouraged to submit wage rate and fringe benefit information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division, Division of Wage Determinations, 200 Constitution Avenue, NW., room S-3014, Washington, DC 20210.

Modification to General Wage Determination Decisions

The number of decisions listed in the Government Printing Office document entitled "General Wage Determinations Issued Under the Davis-Bacon and Related Acts" being modified are listed by Volume and State. Dates of publication in the **Federal Register** are in parentheses following the decisions being modified.

Volume I:

Massachusetts:
MA930001 (Feb. 19, 1993)
MA930002 (Feb. 19, 1993)
Pennsylvania:
PA930004 (Feb. 19, 1993)

Volume II:

None

Volume III:

Arizona:
AZ930006 (Aug. 27, 1993)

General Wage Determination Publication

General wage determinations issued under the Davis-Bacon and related Acts, including those noted above, may be found in the Government Printing Office (GPO) document entitled "General Wage Determinations Issued Under The Davis-Bacon And Related Acts". This publication is available at each of the 50 Regional Government Depository Libraries and many of the 1,400 Government Depository Libraries across the country. Subscriptions may be purchased from: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 783-3238.

When ordering subscription(s), be sure to specify the State(s) of interest, since subscriptions may be ordered for any or all of the three separate volumes, arranged by State. Subscriptions include an annual edition (issued on or about January 1) which includes all current general wage determinations for the States covered by each volume. Throughout the remainder of the year, regular weekly updates will be distributed to subscribers.

Signed at Washington, DC, this 23rd day of December 1993.

Alan L. Moss,

Director, Division of Wage Determinations.

[FR Doc. 93-32051 Filed 12-30-93; 8:45 am]

BILLING CODE 4510-27-M

Employment and Training Administration

[TA-W-29,097]

FD Services, Inc., Casper, WY; Dismissal of Application for Reconsideration

Pursuant to 29 CFR 90.18 an application for administrative reconsideration was filed with the Director of the Office of Trade Adjustment Assistance for workers at FD Services, Incorporated, Casper, Wyoming. The review indicated that the application contained no new substantial information which would bear importantly on the Department's determination. Therefore, dismissal of the application was issued.

TA-W-29,097; FD Services, Incorporated Casper, Wyoming (December 17, 1993)

Signed at Washington, DC, this 21st day of December 1993.

Marvin M. Fooks,

Director, Office of Adjustment Assistance.

[FR Doc. 93-32085 Filed 12-30-93; 8:45 am]

BILLING CODE 4510-30-M

Investigations Regarding Certifications of Eligibility To Apply for Worker Adjustment Assistance

Petitions have been filed with the Secretary of Labor under section 221(a) of the Trade Act of 1974 ("the Act") and are identified in the Appendix to this notice. Upon receipt of these petitions, the Director of the Office of Trade Adjustment Assistance, Employment and Training Administration, has instituted investigations pursuant to section 221(a) of the Act.

The purpose of each of the investigations is to determine whether the workers are eligible to apply for adjustment assistance under Title II, Chapter 2, of the Act. The investigations will further relate, as appropriate, to the determination of the date on which total or partial separations began or threatened to begin and the subdivision of the firm involved.

The petitioners or any other persons showing a substantial interest in the subject matter of the investigations may request a public hearing, provided such request is filed in writing with the Director, Office of Trade Adjustment Assistance, at the address show below, not later than January 13, 1994.

Interested persons are invited to submit written Comments regarding the subject matter of the investigations to the Director, Office of Trade Adjustment Assistance, at the address shown below, not later than January 13, 1994.

The petitions filed in this case are available for inspection at the Office of the Director, Office of Trade Adjustment Assistance, Employment and Training Administration, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210.

Signed at Washington, DC, this 20th day of December 1993.

Marvin M. Fooks,

Director, Office of Trade Adjustment Assistance.

APPENDIX

Petitioner (union/workers/firm)	Location	Date received	Date of petition	Petition No.	Articles produced
Shade/Allied, Inc. (Workers)	Petersburg, WV	12/20/93	12/06/93	29,327	Business Forms.
Tetra-Pak, Inc. (Workers)	Minneapolis, MN	12/20/93	12/01/93	29,328	Liquid Filling Machines.
Continental Airlines (Workers)	Denver, CO	12/20/93	12/02/93	29,329	Aircraft Maintenance.
J.M. Huber Corp. (Co.)	Houston, TX	12/20/93	12/06/93	29,330	Oil and Gas.
Exolon-Esk Co. (USWA)	Tonawanda, NY	12/20/93	12/22/93	29,331	Aluminum Oxide & Silicon Carbide.

APPENDIX—Continued

Petitioner (union/workers/firm)	Location	Date received	Date of petition	Petition No.	Articles produced
Recycled Aluminum Metals Co. (Co.)	Dallesport, WA	12/20/93	12/07/93	29,332	Recycling Service.
CTS Connector Division (Workers)	New Hope, NM	12/20/93	12/03/93	29,333	Electronic Components.
Washington Scientific, Inc. (IBT)	Long Lake, MN	12/20/93	11/30/93	29,334	Computer Components.
Restaura, Inc. (Workers)	Wentzville, MO	12/20/93	10/30/93	29,335	Food Vending Services.
Williamette Industrial Forms Div (Workers).	Beaverton, OR	12/20/93	11/02/93	29,336	Computer Paper.
Union Texas Petroleum (Workers)	Midland, TX	12/20/93	11/29/93	29,337	Oil & Gas Drilling.
Lockheed Corp./Fort Worth Co. (Workers).	Abilene, TX	12/20/93	12/08/93	29,338	Aircraft Wire Harnesses.
Tuboscope Pipeline Services (Workers)	Houston, TX	12/20/93	12/06/93	29,339	Pipeline Inspection Services
Mobil Corp. Research & Dev (Co.)	Princeton, NJ	12/20/93	12/06/93	29,340	Engineering & Research—Oil Gas
Olsken Services (Workers)	Ogdensburg, NY	12/20/93	12/01/93	29,341	Aluminum Ingot.
Elliott Turbomachinary Co. (USWA)	Jeannette, PA	12/20/93	12/10/93	29,342	Turbines and Compressors
Philips Lighting Co. (IUE)	Fairmont, WV	12/20/93	12/09/93	29,343	Home Lighting Products.
Alliant Techsystems, Inc. (Workers)	Hopkins, MN	12/20/93	12/10/93	29,344	Munitions.
Camco Products & Services (Workers)	Houston, TX	12/20/93	12/10/93	29,345	Oilfield Equipment.
Pennington Seismic Exchange (Workers)	Tulsa, OK	12/20/93	11/23/93	29,346	Seismic Data, Profiles & Surveys
Pennington Seismic Exchange, Inc. Workers)	Oklahoma City OK	12/20/93	11/23/93	29,347	Seismic Data, Profiles & Surveys.
Mobil Corp/Research & Dev (Co.)	Paulsboro, NJ	12/20/93	12/06/93	29,348	Research & Dev —Oil and Gas

[FR Doc. 93–32084 Filed 12–30–93 8 45 am]

BILLING CODE 4510–30–M

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION

Submission of Proposed Information Collections to OMB

AGENCY: National Archives and Records Administration

ACTION: Notice of proposed information collections submitted to OMB for approval.

SUMMARY: The National Archives and Records Administration (NARA) is giving notice that the proposed collections of information described in this notice have been submitted to the Office of Management and Budget for approval under the Paperwork Reduction Act and 5 CFR part 1320 Public comment is invited on these collections.

DATES: Comments should be submitted by February 2, 1994.

ADDRESSES: Copies of the proposed information collections and supporting documentation can be obtained from the Policy and Program Analysis Division (NAA), National Archives at College Park, 8601 Adelphi Road, College Park, MD 20704–6001. Telephone requests may be made to (301) 713–6730.

Written comments should be sent to Director, Policy and Program Analysis Division (NAA), at the above address. A copy of the comments should be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for NARA, Washington, DC 20503

FOR FURTHER INFORMATION CONTACT: Mary Ann Hadyka or Nancy Allard at (301) 713–6730.

The following proposed information collections have been submitted to OMB:

1. National Historical Publications and Records Commission Budget Form (NA Form 17001)

Description: The information collection is a budget form used in lieu of SF 242–A. It is part of a grant application prepared by nonprofit organizations and institutions, state and local government agencies, Federally acknowledged or state recognized Native American tribes or groups, and individuals to apply for National Historical Publications and Records Program (NHPRC) support of projects in documentary editing and historical records preservation and planning.

Purpose. The information is used for evaluation of grant applications.

Frequency of response: One time with grant application.

Number of respondents. 200.

Reporting hours per response. 3 hours.

Annual reporting burden hours: 600.

Dated: December 21, 1993.

Trudy Huskamp Peterson,

Acting Archivist of the United States.

[FR Doc. 93–32006 Filed 12–30–93; 8:45 am]

BILLING CODE 7515–01–M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice 94–098]

NASA Advisory Council, Minority Business Resource Advisory Committee; Meeting

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act, Public Law 92–463, as amended, the National Aeronautics and Space Administration announces a forthcoming meeting of the NASA Advisory Council, Minority Business Resource Advisory Committee

DATES: January 27, 1994, 9 a.m to 4 p.m

ADDRESSES: Ames Research Center, Mail Auditorium, Building 201, Moffett Field, California.

FOR FURTHER INFORMATION CONTACT: Mr Ralph C. Thomas, III, Office of Small and Disadvantaged Business Utilization, National Aeronautics and Space Administration, room 9K70, 300 E Street, SW., Washington, DC 20546, (202) 358–2088.

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.

—Review of Fiscal Year (FY) 1993 MBRAC Activities and Accomplishments
—Priority Issues for FY 1994
—Report of the Associate Administrator for Small and Disadvantaged Business Utilization
—Participation from the Public

—Chairman's Report
—Committee Reports
—Wrap-up/Annual Schedule of Committee Meetings.

It is imperative that the meeting be held on this date to accommodate the scheduling priorities of the key participants.

Dated December 28, 1993.

Timothy M. Sullivan,

Advisory Committee Management Officer.

[FR Doc 93–32068 Filed 12–30–93; 8:45 am]

BILLING CODE 7510–01–M

NATIONAL FOUNDATION ON THE ARTS AND THE HUMANITIES

Challenge and Advancement Advisory Panel; Meeting

Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Public Law 92–463), as amended, notice is hereby given that a meeting of the Challenge and Advancement Advisory Panel (Literature Section) to the National Council on the Arts will be held on January 13, 1994 from 9 a.m. to 5:30 p.m. This meeting will be held in room 714, at the Nancy Hanks Center, 1100 Pennsylvania Avenue, NW, Washington, DC 20506.

A portion of this meeting will be open to the public from 3 p.m. to 5:30 p.m. for a policy discussion.

The remaining portion of this meeting from 9 p.m. to 3 p.m is for the purpose of panel review, discussion, evaluation, and recommendation on applications for financial assistance under the National Foundation on the Arts and the Humanities Act of 1965, as amended, including information given in confidence to the agency by grant applicants. In accordance with the determination of the Chairman of November 24, 1992, this session will be closed to the public pursuant to subsection (c) (4), (6) (B) of section 552b of title 5, United States Code.

Any person amy observe meetings, or portions thereof, of advisory panels which are open to the public, and may be permitted to participate in the panel's discussions at the discretion of the panel chairman and with the approval of the full-time Federal employee in attendance.

If you need special accommodations due to a disability, please contact the Office of Special Constituencies, National Endowment for the Arts, 1100 Pennsylvania Avenue, NW., Washington, DC 20506, 202/682–5532, TYY 202/682–5496, at least seven (7) days prior to the meeting.

Further information with reference to this meeting can be obtained from Ms. Yvonne Sabine, Committee Management Officer, National Endowment for the Arts, Washington, DC 20506, or call 202/682–5439.

Dated: December 27, 1993.

Yvonne M. Sabine,

Director, Office of Panel Operation, National Endowment for the Arts.

[FR Doc. 93–32050 Filed 12–30–93; 8:45 am]

BILLING CODE 7537–01–M

NATIONAL LABOR RELATIONS BOARD

Appointments of Individuals to Serve as Members of Performance Review Boards

5 U.S.C 4314(c)(4) requires that the appointments of individuals to serve as members of performance review boards be published in the **Federal Register** Therefore, in compliance with this requirement, notice is hereby given that the individuals whose names and position titles appear below have been appointed to serve as members of performance review boards in the National Labor Relations Board for the rating year beginning October 1, 1992 and ending September 30, 1993.

Name and Title

Robert E. Allen—Associate General Counsel, Advice
Frank V. Battle—Deputy Director of Administration
Harold J. Datz—Chief Counsel to Board Member
Yvonne T Dixon—Acting Deputy General Counsel
Frederick Freilicher—Chief Counsel to Board Member
John E. Higgins—Solicitor
Susan Holik—Chief Counsel to Board Member
Gloria Joseph—Director of Administration
Nicholas E. Karatinos—Acting Associate General Counsel, Enf. Lit.
Barry J. Kearney—Deputy Associate General Counsel, Advice
Joseph E. Moore—Deputy Executive Secretary
W. Garrett Stack—Associate General Counsel, Operations-Management
Elinor H. Stillman—Chief Counsel to the Chairman
Berton B. Subrin—Director, Office of Representation Appeals
John C. Truesdale—Executive Secretary

Dated: Washington, DC, November 8, 1993.

By Direction of the Board.

John C. Truesdale,

Executive Secretary.

[FR Doc. 93–32004 Filed 12–30–93; 8:45 am]

BILLING CODE 7545–01–M

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–261]

Carolina Power & Light Co.; H.B. Robinson Steam Electric Plant, Unit No. 2; Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission is considering issuance of a scheduler exemption from the requirements of 10 CFR part 50, Appendix E, to Carolina Power & Light Company (CP&L or the licensee), for H.B. Robinson Steam Electric Plant, Unit No. 2 (HBR), located in Darlington County, South Carolina.

Environmental Assessment

Identification of the Proposed Action

The proposed exemption would allow temporary relief from the requirements of 10 CFR part 50, Appendix E, Section IV.F.2., for the licensee at HBR to annually exercise its emergency plan. By letter dated November 21, 1993, as supplemented November 22, 1993, the licensee requested an exemption from the requirements of 10 CFR part 50 Appendix E, to conduct an annual exercise of the HBR Radiological Emergency Plan in 1993. The licensee had planned to conduct a full-participation exercise involving the State of South Carolina and local response organizations on November 30 1993. The licensee requested that an exemption be granted for the conduct of the onsite portion of the exercise because the licensee would not have sufficient staff to conduct a meaningful exercise of the HBR Emergency Plan due to resource constraints caused by an unscheduled outage to investigate and address core design issues. This proposed delay will prevent HBR from meeting the requirement to conduct an annual exercise of the HBR Emergency Plan. However, the licensee proposed that the offsite portion of the exercise involving the State of South Carolina and local governmental authorities be conducted as scheduled on November 30, 1993. The licensee requested a delay of the onsite portion of the 1993 annual exercise from November 30, 1993, to the week of March 21, 1994. The request to move the exercise date was originated by the licensee because they would be unable to participate on November 30, 1993, as a result of their involvement at that time in addressing safety issues identified during startup after refueling outage 15. The reactor was ascending to full power operation after a refueling outage when low power physics testing revealed an improper configuration

emanating from the design of the new fuel. The new fuel consisted of 44 fuel assemblies, 5 of which were found to be configured improperly against design specifications. As a result, the NRC dispatched an Augmented Inspection Team to the site and the licensee formed three investigative teams. The licensee stated that all of these efforts to develop corrective actions for core reconfiguration and to investigate and resolve any industry implications of fuel configuration problems diverted focus and resources. The offsite portion of the exercise involving the State of South Carolina and local governmental authorities would be conducted as scheduled on November 30, 1993. This proposed delay will prevent the licensee from meeting the requirement to annually exercise the HBR Radiological Emergency Plan, as specified in Appendix E to 10 CFR part 50, and, therefore, the licensee requested a scheduler exemption.

The previous emergency preparedness exercise at HBR was successfully conducted on November 17, 1992, and included the partial participation of State and local agencies for notifications and communications only. The licensee had scheduled, planned, and coordinated the 1993 exercise with participating Federal, State, and local agencies for November 30, 1993. The scope and objectives, and the final scenario documentation for the November 1993 exercise were submitted to the NRC on September 13, 1993, and October 14, 1993, respectively, which is within the time frame established for their submittal in support of a November 1993 exercise. In addition, the licensee states that a training exercise with the State of South Carolina and local governmental agencies was conducted on November 16, 1993, which activated all emergency facilities and included participation from all major responder groups.

The Need for the Proposed Action

The proposed exemption is needed because the licensee would not have sufficient staff to meaningfully exercise the HBR Emergency Plan due to resource constraints caused by an unscheduled outage to investigate and address core design issues.

Environmental Impacts of the Proposed Action

The proposed exemption does not involve any measurable environmental impacts since the exemption deals with the exercise of the licensee's emergency plan. Plant configuration and operations are not changed. Thus, the proposed exemption would not affect the probability or consequences of a potential reactor accident and would not otherwise affect radiological plant effluents. Consequently, the Commission concludes that there are no significant radiological impacts associated with the proposed exemption.

With regard to potential nonradiological impacts, the proposed exemption involves only the emergency plan exercises. It does not affect nonradiological plant effluents and there are no other nonradiological environmental impacts associated with the proposed exemption.

Alternatives to the Proposed Action

Since the staff has concluded that there are no measurable environmental impacts associated with the proposed exemption, any alternatives with equal or greater environmental impact need not be evaluated.

The principal alternative to the exemption would be to require strict compliance with 10 CFR part 50, Appendix E, Section IV.F.2., for the licensee at HBR to annually exercise its emergency plan. This would not reduce environmental impacts of plant operation and would result in a diversion of plant resources from addressing important health and safety issues.

Alternative Use of Resources

This exemption from the scheduled exercise in November 1993 does not reduce the use of resources since the schedule for future exercises will not be affected by this exemption. The licensee has stated it will conduct the previously scheduled 1994 exercise in November 1994, as planned. Thus, the requested exemption would provide only temporary relief from the requirement to conduct an annual exercise.

Agencies and Persons Consulted

The staff consulted with the State of South Carolina regarding the environmental impact of the proposed action.

Finding of No Significant Impact

Based upon the foregoing environmental assessment, the Commission concludes that the proposed action would not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed exemption.

For further details with respect to this action, see the application dated November 21, 1993, as supplemented November 22, 1993, which is available for public inspection at the Commission's Public Document Room, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Hartsville Memorial Library, Home and Fifth Avenues, Hartsville, SC 29550.

Dated at Rockville, Maryland, this 28th day of December 1993.

For the Nuclear Regulatory Commission.

George F. Wunder,

Acting Director, Project Directorate II–I, Division of Reactor Projects—I/II, Office of Nuclear Reactor Regulation.

[FR Doc. 93–32089 Filed 12–30–93; 8:45 am]

BILLING CODE 7590–01–M

[Docket Nos. 50–352, 50–353, 50–322] [DD–93–22]

Shipments of Fuel From Long Island Power Authority's Shoreham Nuclear Power Station to Philadelphia Electric Company's Limerick Generating Station; Issuance of Director's Decision Under 10 CFR 2.206

Notice is hereby given that the Director, Office of Nuclear Material Safety and Safeguards, has taken action with regard to the Petition of October 8, 1993, filed by Fred DeVesa, Esq., Acting Attorney General of New Jersey, on behalf of the New Jersey Department of Environmental Protection and Energy (Petitioner). The Petitioner requested that the Commission: (1) Amend Long Island Power Authority's (LIPA's) decommissioning plan to specifically address the transfer and transport of LIPA's fuel to Philadelphia Electric Company (PECo); (2) perform an Environmental Assessment (EA), pursuant to 10 CFR 51.30, and make a determination based on the EA, pursuant to 10 CFR 51.31, regarding the proposed transfer and transport of the fuel by barge, from LIPA to PECo, which addresses the risks associated with the shipment of the fuel along and through New Jersey's coastal zone; (3) perform a Consideration of Alternatives, in accordance with section 102(2)(E) of the National Environmental Policy Act (NEPA) and 40 CFR 1509(b), which addresses alternative means of transporting fuel from LIPA to PECo; and (4) immediately stay PECo's June 23, 1993, license amendments, the Certificate of Compliance regarding the IF–300 issued to Pacific Nuclear Systems, and LIPA's license and general license to transfer the fuel pursuant to 10 CFR 71.12 pending completion of the above actions and compliance with the consistency process under the Coastal Zone Management Act (CZMA). The Petitioner asserted, in support of these

requests, that the U.S. Nuclear Regulatory Commission has violated NEPA, the CZMA, and the Atomic Energy Act by allowing the transfer and transport of LIPA's fuel to proceed absent any consideration of the potential effects on New Jersey's coastal zone, any case-specific environmental impact analysis, or any consideration of alternatives to the means of transport. Specifically, the Petitioner asserted that: (1) The NRC failed to consider alternatives under NEPA for the proposed action; (2) the NRC failed to perform an EA for the transfer and barge transport of LIPA's fuel; (3) the NRC's EA for PECo's license amendments was inadequate; (4) the NRC violated NEPA by segmenting the approval of the transfer and transport by barge; (5) the NRC failed to require LIPA to obtain necessary approvals; and (6) the NRC violated the CZMA by failing to require necessary consistency reviews. The Notice of Receipt of Petition for Director's Decision, under 10 CFR 2.206, was published in the **Federal Register** on October 29, 1993 (58 FR 58203).

The Director of the Office of Nuclear Material Safety and Safeguards has determined to deny the Petition. The reasons for this denial are explained in the "Director's Decision under 10 CFR 2.206" (DD–93–22), which is available for public inspection in the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW. (Lower Level), Washington, DC 20555.

A copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations. As provided by this regulation, the decision will constitute the final action of the Commission 25 days after the date of issuance of the decision unless the Commission, on its own motion, institutes a review of the decision within that time.

Dated at Rockville, Maryland, this 23rd day of December 1993.

For the Nuclear Regulatory Commission.

Robert M. Bernero,

Director, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 93–32031 Filed 12–30–93; 8:45 am]

BILLING CODE 7590–01–M

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE

Identification of Priority Foreign Countries: Request for Public Comment

AGENCY: Office of the United States Trade Representative.

ACTION: Request for written submissions from the public concerning acts, policies, and practices to be considered with respect to identification of countries under section 182 of the Trade Act of 1974, as amended (Trade Act).

SUMMARY: Section 182 of the Trade Act requires the United States Trade Representative (USTR) to identify countries that deny adequate and effective protection of intellectual property rights or deny fair and equitable market access to U.S. persons that rely on intellectual property protection. (19 U.S.C. 2242.) In addition, the USTR is required to determine which of those countries identified are priority foreign countries. Such priority countries could be subject to initiation of a "special" 301 investigation.

The USTR requests written submissions from the public concerning foreign countries' acts, policies, and practices that are relevant to the decision whether particular trading partners should be identified under section 182 of the Trade Act.

DATES: Submission must be received on or before 12 noon on Friday, February 18, 1994.

FOR FURTHER INFORMATION CONTACT: Joseph Papovich, Deputy Assistant USTR for Intellectual Property (202) 395–6864; Gilbert Donahue at (202) 395–6864; or Thomas Robertson, Associate General Counsel (202) 395–6800, Office of the United States Trade Representative.

SUPPLEMENTARY INFORMATION: Pursuant to section 182 of the Trade Act of 1974, as amended by the Omnibus Trade and Competiveness Act of 1988, the USTR must identify those countries that deny adequate and effective protection for intellectual property rights or deny fair and equitable market access to U.S. persons that rely on intellectual property protection. Those countries that have the most onerous or egregious acts, policies or practices have the greatest adverse impact (actual or potential) on relevant U.S. products are to be identified as priority foreign countries.

The USTR may not identify a country as a priority foreign country if it is entering into good faith negotiations, or making significant progress in bilateral or multilateral negotiations, to provide adequate and effective protection of intellectual property rights.

The USTR must decide whether to identify countries as priority foreign countries each year and issue a decision within 30 days after publication of the National Trade Estimate (NTE) report, i.e., no later than April 30, 1993. Priority foreign countries are potentially subject to initiation of an investigation under section 301 of the Trade Act.

Requirements for Submissions

Submissions should include a description of the problems experienced and the effect of the acts, policies, and practices on U.S. industry. Submissions should be as detailed as possible and should provide all necessary information for assessing the effect of the acts, policies and practices. Any submissions that include quantitative loss claims should be accompanied by the methodology used in calculating such estimated losses. Comments must be filed in accordance with the requirements set forth in 15 CFR 2006.8(b) (55 FR 20593) and must be sent to Dorothy Balaban, Special Assistant to the Section 301 Committee, room 223, 600 17th Street, NW., Washington, DC 20506, no later than 12 noon on Friday, February 18, 1994. Because submissions will be placed in a file open to public inspection at USTR, business-confidential information should not be submitted.

Public Inspection of Submissions

Within one business day of receipt, submissions will be placed in a public file, open for inspection at the USTR Reading Room, in room 101, Office of the United States Trade Representative, 600 17th Street, NW., Washington, DC. An appointment to review the file may be made by calling Brenda Webb, (202) 395–6186. The USTR Reading Room is open to the public from 10 a.m. to 12 noon and from 1 p.m. to 4 p.m., Monday through Friday.

Gordana S. Earp,

Acting Assistant USTR for Services, Investment and Intellectual Property.

[FR Doc. 93–32030 Filed 12–30–93; 8:45 am]

BILLING CODE 3190–01–M

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–33390; File No. 265–18]

Market Transactions Advisory Committee; Meeting

AGENCY: Securities and Exchange Commission.

ACTION: Notice of meeting of the Securities and Exchange Commission ("Commission") Market Transactions Advisory Committee ("Committee").

SUMMARY: This is to give notice that the Securities and Exchange Commission Market Transactions Advisory Committee will meet on January 19, 1994, in Room 1C30 at the

Commission's main offices, 450 Fifth Street NW., Washington, DC, beginning at 10 a.m. The meeting will be open to the public. This notice also serves to invite the public to submit written comments to the Committee.

ADDRESSES: Written comments should be submitted in triplicate and should refer to File No. 265–18. Comments should be submitted to Jonathan G. Katz, Secretary, Securities and Exchange Commission, 450 Fifth Street, NW., Washington, DC 20549.

FOR FURTHER INFORMATION CONTACT: Jack Drogin, Division of Market Regulation at (202) 272–2775, or Ari Burstein, Division of Market Regulation at (202) 504–2933; Securities and Exchange Commission, 450 Fifth Street, NW., Washington, DC 20549.

SUPPLEMENTARY INFORMATION: In accordance with Section 10(a) of the Federal Advisory Committee Act, 5 U.S.C. app 10a, the Securities and Exchange Commission Market Transactions Advisory Committee hereby gives notice that it will meet on January 19, 1994, in Room 1C30 at the Commission's main offices, 450 Fifth Street, NW., Washington, DC, beginning at 10 a.m. The meeting will be open to the public.

The Committee was formed under Section 17A(f) of the Securities Exchange Act of 1934. The Committee's responsibilities include assisting the Commission in identifying State and Federal laws that impede the safe and efficient clearance and settlement of securities transactions and in advising the Commission on the use of the Commission's authority under the Market Reform Act of 1990 to adopt uniform federal rules regarding the transfer and pledge of securities.

The purpose of the meeting will be to discuss the progress of the Committee's subgroups and to plan the continued progression of the Committee's work. In addition, the Committee will discuss the status of the project to revise Article 8 of the Uniform Commercial Code undertaken by the National Conference of Commissioners on Uniform State laws.

Dated: December 28, 1993.

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 93–32059 Filed 12–30–93; 8:45 am]

BILLING CODE 8010–01–M

Self-Regulatory Organizations; Applications for Unlisted Trading Privileges; Notice and Opportunity for Hearing; Boston Stock Exchange, Incorporated

December 23, 1993.

The above named national securities exchange has filed applications with the Securities and Exchange Commission ("Commission") pursuant to section 12(f)(1)(B) of the Securities Exchange Act of 1934 and rule 12f-1 thereunder for unlisted trading privileges in the following securities:

Grupo Financiero Serfin S.A. de C.V.
American Depositary Shares, No Par Value (File No. 7–11719)
Detroit Diesel Corp.
Common Stock, $.01 Par Value (File No. 7–11720)
Emerging Markets Telecommunication Fund
Common Stock, $.001 Par Value (File No. 7–11721)
Golden Star Resources, Ltd.
Common Stock, $.01 Par Value (File No. 7–11722)
Talbots, Inc.
Common Stock, $.01 Par Value (File No. 7–11723)
Trans World Airlines
Voting Trust Cert., No Par Value (File No. 7–11724)
Trans World Airlines
Cum. Preferred, $.01 Par Value (File No. 7–11725)
Torch Energy Royalty Trust
Common Stock, No Par Value (File No. 7–11726)

These securities are listed and registered on one or more other national securities exchange and are reported in the consolidated transaction reporting system.

Interested persons are invited to submit on or before January 18, 1994, written data, views and arguments concerning the above-referenced application. Persons desiring to make written comments should file three copies thereof with the Secretary of the Securities and Exchange Commission, 450 5th Street, NW, Washington, DC 20549. Following this opportunity for hearing, the Commission will approve the application if it finds, based upon all the information available to it, that the extensions of unlisted trading privileges pursuant to such applications are consistent with the maintenance of fair and orderly markets and the protection of investors.

For the Commission, by the Division of Market Regulation, pursuant to delegated authority.

Jonathan G. Katz,

Secretary.

[FR Doc. 93–32055 Filed 12–30–93; 8:45 am]

BILLING CODE 8010–01–M

DEPARTMENT OF TRANSPORTATION

Applications for Certificates of Public Convenience and Necessity and Foreign Air Carrier Permits Filed Under Subpart Q During the Week Ended December 23, 1993

The following Applications for Certificates of Public Convenience and Necessity and Foreign Air Carrier Permits were filed under subpart Q of the Department of Transportation's Procedural Regulations (See 14 CFR 302.1701 et. seq.). The due date for Answers, Conforming Applications, or Motions to Modify Scope are set forth below for each application. Following the Answer period DOT may process the application by expedited procedures. Such procedures may consist of the adoption of a show-cause order, a tentative order, or in appropriate cases a final order without further proceedings.

Docket Number: 49328.

Date filed: December 20, 1993.

Due Date for Answers, Conforming Applications, or Motion to Modify Scope: January 18, 1994.

Description: Application of Katmailand, Inc. d/b/a Katmai Air, pursuant to section 401(d)(1) of the Act, and subpart Q of the Regulations, applies for a certificate of public convenience and necessity authorizing interstate and overseas scheduled air transportation between the points of Brooks Camp, Katmai National Park, Alaska and King Salmon, Alaska.

Phyllis T. Kaylor,

Chief, Documentary Services Division.

[FR Doc. 93–32048 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–62–P

Aviation Proceedings; Agreements Filed During the Week Ended December 23, 1993

The following Agreements were filed with the Department of Transportation under the provisions of 49 U.S.C 412 and 414. Answers may be filed within 21 days of date of filing.

Docket Number: 49331.

Date filed: December 21, 1993.

Parties: Members of the International Air Transport Association.

Subject: TC2 Reso/P 1493 dated October 19, 1993, Middle East-Africa Resos r–1 to r–19.

Proposed Effective Date: April 1, 1994.

Docket Number: 49332.

Date filed: December 21, 1993.

Parties: Members of the International Air Transport Association.

Subject: TC2 Reso/P 1485 dated October 1, 1993, Europe-Middle East Resos r–1 to r–29.

Proposed Effective Date: April 1, 1994.

Docket Number: 49333.

Date filed: December 21, 1993.

Parties: Members of the International Air Transport Association.

Subject: TC3 Reso/P 0611 dated October 8, 1993, Europe-Japan/Korea Resos r–1 to r–54.

Proposed Effective Date: January 12, 1994.

Phyllis T. Kaylor,

Chief, Documentary Services Division.

[FR Doc. 93–32049 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–62–P

National Highway Traffic Safety Administration

[Docket No. 79–17; Notice 39]

New Car Assessment Program; Consideration of a Public Meeting

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Request for comments.

SUMMARY: This notice requests comments on NHTSA's consideration of a public meeting to review and discuss issues concerning, and options for, the New Car Assessment Program (NCAP) and on the agenda for the meeting. In 1972, Congress enacted the "Motor Vehicle Information and Cost Savings Act" which includes requirements for the development and dissemination of comparative information on the crashworthiness of motor vehicles. In 1978, NCAP with the primary purpose of partially fulfilling this requirement. In NCAP frontal crash tests of approximately 35 passenger vehicles are conducted each year and the test results are made available to the public. To be responsive to Congress and to further benefit the public, NHTSA is considering convening a public meeting on the program to review the present NCAP and to invite information that could improve the program.

DATES: Written comments on this notice must be submitted no later than March 4, 1994.

ADDRESSES: Comments on this notice must refer to the docket and notice numbers set forth above and be submitted (preferably in 10 copies) to the Docket Section, National Highway Traffic Safety Administration, room 5109, 400 Seventh Street SW., Washington, DC 20590. Submissions containing information for which confidential treatment is requested should be submitted (3 copies) to Chief Counsel, National Highway Traffic Safety Administration, room 5219, 400 Seventh Street SW., Washington, DC 20590, and 7 copies from which the purportedly confidential information has been deleted should be sent to the Docket Section.

FOR FURTHER INFORMATION CONTACT: Jim Hackney, Office of Market Incentives, NHTSA, 400 Seventh Street, SW., Washington, DC 20590 (202–366–1740).

SUPPLEMENTARY INFORMATION: In December 1993, the agency submitted a report to Congress on NCAP. This report can be found in this Docket and is titled Response to the NCAP FY 1992 Congressional Requirements.

This report provides:

- The results of an 18-month study to assess consumer and media needs and preferences for better understanding and more effective use of NCAP data. This included a summary of several consumer focus group and media studies. These studies indicated that consumers and the media desire comparative safety information on vehicles, a simplified NCAP format to better understand and utilize the crash test results, and expansion of NCAP to include other crash modes, such as side crashes and rollovers. Plans for implementing the findings of these studies are included in the report.
- Studies of real-world crashes versus NCAP crash tests. These studies tentatively conclude that NCAP test conditions approximate real-world crash conditions covering a major segment of the frontal crash safety problem. The studies also conclude that there is a significant correlation between NCAP results and real-world fatality risks for restrained drivers. In high speed frontal crashes, fatality risks to restrained drivers of cars that perform well in NCAP may be as much as 30 percent lower than fatality risks to restrained drivers of cars that do not perform well in NCAP. A more detailed report on this subject will soon be published for public comment.
- A study on the efficacy of allowing manufacturers to choose between the Hybrid III and the Hybrid II crash test dummy. NCAP data were utilized in this study along with an analysis of comments to **Federal Register** notices on the mandatory use of the Hybrid III crash test dummy in Federal Motor Vehicle Safety Standard (FMVSS) No. 208 and in NCAP. After considering data analysis and reviewing the comments to the two notices, NHTSA has concluded that exclusive use of the Hybrid III in NCAP should begin with MY 1996 vehicles. This is two years earlier than required by the recent amendment to FMVSS No. 208. Beginning with MY 1994 vehicles, the Hybrid III is being used exclusively for all seating positions in which the occupant is protected by an air bag.

The report also includes a review of NCAP historical performance and the following future goals for NCAP.

- Reach a larger group of the population with simplified data that will assist consumers in their vehicles purchases.
- Expand the collection of safety information by utilizing the additional injury-measuring capabilities of the more advance Hybrid III dummy.
- Expand NCAP to provide comparative side impact information to consumers along with the frontal NCAP information.
- Monitor rollover safety activities to determine the potential for providing consumers with comparative information on levels of protection in the rollover crash mode and on vehicle roll stability.

In the report, the agency also referred to the possibility of convening a public meeting on NCAP. A public meeting could provide an open forum for consumer groups, media, foreign governments, national and international safety organizations, universities, and motor vehicle manufacturers to discuss the above NCAP goals and relevant new suggestions. Comments could be solicited on any of the material in the Congressional report and opportunities could be given for interested parties to suggest alternative or additional NCAP goals and activities. If it is determined that such a meeting is desirable, it could be scheduled for the late spring of 1994.

Comments are therefore solicited on:

(1) The desirability and need for such a public meeting and

(2) The topics for consideration if a meeting is conducted. These topics may include all items discussed above that are included in the Congressional report and others such as:

- Additional frontal crash modes and/or higher frontal test speeds. Efforts in the U.S. and internationally are exploring the applicability of various frontal crash tests in assessing occupant protection. Offset and angled frontal tests into deformable and rigid barriers are being conducted and assessed. What implications do these additional crash modes and/or higher test speeds have for vehicle crashworthiness assessment and for vehicle manufacturers?
- Additional injury measures. As discussed in the Congressional report, the Hybrid III crash test dummy provides the capability to measure

additional parameters including neck loads, chest compression, lower leg loads, and, potentially, abdominal loads. How would these measures be used to enhance consumer information? Should such measures be used in consumer information prior to possible introduction in regulations?

• Whether crashworthiness assessment programs should precede or follow the rulemaking process. For example, the present NCAP preceded mandatory dynamic frontal crash requirements of FMVSS No. 208 by eight years. (Note: The test procedures and test devices for 30 mph testing had received prior rulemaking review.) However, in the case of side impact, expansion of NCAP has awaited completed rulemaking action prior to the possible initiation of a consumer information program. As early as May 1984, NHTSA had established the feasibility for improving occupant protection in side impacts (SAE Paper No. 840886, presented at the Government/Industry Meeting in May 1984). What are the implications to consumers and vehicle manufacturers if crashworthiness assessment programs precede the rulemaking process?

• Review of the simplified format. In December 1993, NHTSA issued the first news release for the model year 1994 vehicles. A simplified format that utilized a star classification system was introduced in this release. A copy of the news release can be obtained by contacting the NHTSA Office of Public and Consumer Affairs. This classification system is based on a combined probability of life-threatening head and chest injury to the driver and passenger in the frontal NCAP test. Is this format effective in providing information to consumers? Is there agreement on its scientific basis?

• Any other relevant issues that the consumers, consumer organizations, vehicle manufacturers, or other interested parties may suggest.

Commenters who favor such a meeting should also indicate whether they might be interested in providing a public statement at the meeting and on what subjects. If it is decided to conduct a meeting, an additional public notice will be provided.

Issued on December 27, 1993.

Barry Felrice,

Associate Administrator for Rulemaking.

[FR Doc. 93–32022 Filed 12–30–93; 8:45 am]

BILLING CODE 4910–59–M

DEPARTMENT OF THE TREASURY

Public Information Collection Requirements Submitted to OMB for Review

December 27, 1993.

The Department of Treasury has made revisions and resubmitted the following public information collection requirement(s) to OMB for review and clearance under the Paperwork Reduction Act of 1980, Public Law 96–511. Copies of the submission(s) may be obtained by calling the Treasury Bureau Clearance Officer listed. Comments regarding this information collection should be addressed to the OMB reviewer listed and to the Treasury Department Clearance Officer, Department of the Treasury, Room 3171 Treasury Annex, 1500 Pennsylvania Avenue, NW., Washington, DC 20220.

Internal Revenue Service

OMB Number: New.

Form Number: IRS Form 8840.

Type of Review: Resubmission.

Title: State of Closer Connection Exception (Under Section 7701(b)).

Description: Form 8840 is used by an alien individual, who otherwise meets the substantial presence test, to explain the basis of the individual's claim that he or she is able to satisfy the closer connection exception described in Regs. sec. 301.7701(b)–2.

Respondents: Individuals or households.

Estimated Number of Respondents/Recordkeepers: 350,000.

Estimated Burden Hours Per Respondent/Recordkeeper:

Recordkeeping—13 minutes
Learning about the law or the form—7 minutes
Preparing the form—1 hour, 19 minutes
Copying, assembling, and sending the form to the IRS—35 minutes

Frequency of Response: Annually.

Estimated Total Reporting/Recordkeeping Burden: 756,000 hours.

OMB Number: New.

Form Number: IRS Form 8843.

Type of Review: Resubmission.

Title: Statement of Exempt Individuals (Under section 7701(b)).

Description: Form 8843 is used by an alien individual to explain the basis of the individual's claim that he or she is able to exclude days of presence in the U.S. because the individual is a teacher/trainee or student; professional athlete; or has a medical condition or problem.

Respondents: Individuals or households.

Estimated Number of Respondents/Recordkeepers: 150,000.

Estimated Burden Hours Per Respondent/Recordkeeper:

	Form 8843 Pt. I & II	Form 8843 Pt. I & III	Form 8843 Pt. I & II	Form 8843 Pt. I & V
Recordkeeping	13 min.	13 min.	13 min.	13 min.
Learning about the law or the form	5 min.	5 min.	5 min.	5 min.
Preparing the form	29 min.	34 min.	24 min.	34 min.
Copying, assembling, and sending the form to the IRS	17 min.	17 min.	17 min.	17 min.

Frequency of Response: Annually.

Estimated Total Reporting/Recordkeeping Burden: 172,485 hours.

Clearance Officer: Garrick Shear, (202) 535–4297, Internal Revenue Service, Room 5571, 1111 Constitution Avenue, NW., Washington, DC 20224.

OMB Reviewer: Milo Sunderhauf, (202) 395–6880, Office of Management and Budget, Room 3001, New Executive Office Building, Washington, DC 20503.

Lois K. Holland,

Departmental Reports, Management Officer.

[FR Doc. 93–32056 Filed 12–30–93; 8:45 am]

BILLING CODE 4830–01–P

Public Information Collection Requirements Submitted to OMB for Review

December 27, 1993.

The Department of Treasury has submitted the following public information collection requirement(s) to OMB for review and clearance under the Paperwork Reduction Act of 1980, Public Law 96–511. Copies of the submission(s) may be obtained by calling the Treasury Bureau Clearance

Officer listed. Comments regarding this information collection should be addressed to the OMB reviewer listed and to the Treasury Department Clearance Officer, Department of the Treasury, Room 3171 Treasury Annex, 1500 Pennsylvania Avenue, NW., Washington, DC 20220.

Internal Revenue Service

OMB Number: 1545–0023.

Form Number: IRS Form 720.

Type of Review: Revision.

Title: Quarterly Federal Excise Tax Return.

Description: Form 720 is used to report excise taxes due from retailers and manufacturers on the sale or manufacture of various articles, to report taxes on facilities and services, and taxes on certain products and commodities (gasoline and vaccines, etc.). It enables IRS to monitor excise tax liability for various categories on a single form and to collect the tax quarterly in compliance with the law and regulations (Internal Revenue Code 6011).

Respondents: Individuals or households, Businesses or other for-profit, Small businesses or organizations.

Estimated Number of Respondents/Recordkeepers: 338,000.

Estimated Burden Hours Per Respondent/Recordkeeper:

Form	Recordkeeping	Learning about the law or the form	Preparing and sending the form to the IRS
720	25 hr., 35 min.	2 hr., 20 min.	8 hr., 51 min.
Sch. A	2 hr., 23 min.		2 min.
Sch. C Part I	2 hr., 38 min.		2 min.
Sch. C Part II	7 hr., 10 min.		7 min.
Sch. C Part III	14 min.		

Frequency of Response: Quarterly.

Estimated Total Reporting/Recordkeeping Burden: 9,917,620 hours.

Clearance Officer: Garrick Shear, (202) 622–3869, Internal Revenue Service, Room 5571, 1111 Constitution Avenue, NW., Washington, DC 20224.

OMB Reviewer: Milo Sunderhauf, (202) 395–6880, Office of Management and Budget, Room 3001, New Executive Office Building, Washington, DC 20503.

Lois K. Holland,

Departmental Reports Management Officer

[FR Doc. 93–32057 Filed 12–30–93; 8:45 am]

BILLING CODE 4830–01–P

Sunshine Act Meetings

Federal Register
Vol. 58, No. 1
Monday, January 3, 1994

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

FEDERAL ELECTION COMMISSION

DATE AND TIME: Thursday, January 6, 1994 at 10:00 a.m.

PLACE: 999 E Street, N.W. Washington, D.C. (Ninth Floor.)

STATUS: This Meeting Will be Open to the Public.

ITEMS TO BE DISCUSSED:

Advisory Opinion 1993–22: The Honorable Robert A. Roe.

December 21, 1993 Letter to The Honorable Robert L. Livingston: Provision of Commission services and office space to Special Deputies and their staffs.

DATE AND TIME: Wednesday, January 12, 1994 at 10:00 a.m.

PLACE: 999 E Street, N.W. Washington, D.C. (Ninth Floor.)

STATUS: This Oral Hearing Will Be Open to the Public.

MATTERS BEFORE THE COMMISSION: Public Hearing on Personal Use of Campaign Funds.

PERSON TO CONTACT FOR INFORMATION: FEC Press Officer, Telephone: (202) 219–4155.

Marjorie W. Emmons,
Secretary of the Commission.

[FR Doc. 93–32096 Filed 12–29–93; 2:52 pm]

BILLING CODE 6715–01–M

Corrections

Federal Register
Vol. 59, No. 1
Monday, January 3, 1993

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Parts 401, 488 and 489

[HSQ–159–F]

RIN 0938–AF17

Medicare Program; Granting and Withdrawal of Deeming Authority to National Accreditation Organizations

Correction

In rule document 93-28436 beginning on page 61816 in the issue of Tuesday, November 23, 1993, make the following correction:

On page 61816, in the second column, in **EFFECTIVE DATE:**, in the second line, "February 22, 1993." should read "February 22, 1994."

BILLING CODE 1505-01-D

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

43 CFR Public Land Order 6986

[OR-943-4210-06; GP3-219; OR-47417]

Withdrawal of National Forest System Lands To Protect the Scenic Segment of the Illinois Wild and Scenic River; Oregon

Correction

In rule document 93-14594 beginning on page 35408 in the issue of Thursday, July 1, 1993, make the following correction:

1. On page 35409, in the second column, before the signature, insert "June 8, 1993.".

BILLING CODE 1505-01-P

federal register

Monday
January 3, 1994

Part II

Department of the Treasury

Customs Service

19 CFR Part 4, et al.

Rules for Determining the Country of Origin of a Good for Purposes of Annex 311 of the NAFTA and Rules of Origin Applicable to Imported Merchandise; Rule and Proposed Rule

DEPARTMENT OF THE TREASURY

Customs Service

19 CFR Parts 12, 102, and 134

RIN 1515–AB34

[T.D. 94–4]

Rules for Determining the Country of Origin of a Good for Purposes of Annex 311 of the North American Free Trade Agreement

AGENCY: U.S. Customs Service, Department of the Treasury.

ACTION: Interim regulations; solicitation of comments.

SUMMARY: This document establishes the rules for determining when the country of origin of a good is one of the parties to the North American Free Trade Agreement for purposes of Annex 311 of that Agreement. This agreement was implemented under the North American Free-Trade Agreement Implementation Act, Public Law 103–182, 107 Stat. 437 (December 8, 1993).

DATES: This interim rule is effective January 1, 1994. Comments must be received on or before April 4, 1994.

ADDRESSES: Written comments (preferably in triplicate) may be addressed to U.S. Customs Service, 1301 Constitution Avenue, NW., Franklin Court, Washington, DC 20229, and they may be inspected at the Regulations Branch located at 1099 14th St. NW., Suite 4000, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Sandra L. Gethers, Office of Regulations and Rulings (202–482–6980).

SUPPLEMENTARY INFORMATION:

Background

Paragraph 1 of Annex 311 of the North American Free-Trade Agreement (NAFTA), entitled "Country of Origin Marking," provides that the parties shall establish "MARKING RULES" to determine when a good is a good of a NAFTA country, i.e., whether the country of origin of a good is either the United States, Canada, and Mexico, for the following purposes specified in that Annex: (1) country of origin marking; (2) Annex 300–B (Textile and Apparel Goods); and (3) Annex 302.2 (Tariff Elimination).

The interim regulations established in this document represent fulfillment of the United States obligations under Annex 311. These interim regulations will be effective on January 1, 1994, for all goods imported into the United States for purposes of determining whether or not the country of origin of such goods is either Canada, Mexico or the United States.

In a separate Notice of Proposed Rulemaking published in today's **Federal Register**, the Customs Service is proposing to establish identical rules for determining the country of origin of all imported goods for all purposes under the Customs and related laws.

The Customs Service, however, will also honor all existing written rulings issued pursuant to part 177 of this chapter (19 CFR part 177) during the interim period of these regulations.

Discussion of Interim Regulations

Section 102.0 Scope

Section 102.0 sets forth the purposes previously identified under Annex 311, for which the rules in this part will be used. These rules are considered the "Marking Rules" for purposes of that Annex.

Section 102.1 Definitions

Section 102.1, "Definitions", sets forth the definitions of terms that will be used in part 102. It is of note that some of the defined terms, such as "wholly obtained or produced" in paragraph (g) will be used only in § 102.11, "General Rules", while other terms, such as the definition for "material," will be used in several sections in this part, including in many of the specific rules in § 102.20. Of special note is the definition of "material", another term that is used throughout this part. Under paragraph (k), the term, "material" is defined as including "parts", "ingredients", subassemblies", and "components", terms which are used interchangeably in this part.

Section 102.11 General Rules

Section 102.11, "General Rules," sets forth the required hierarchy for determining country of origin under this part, unless otherwise specified in another provision of this part. Paragraphs (a)(1) through (a)(3) of § 102.11 set forth the three common circumstances in which the country of origin of a good is determined. First, the country of origin can be the country in which the good is "wholly obtained or produced" as defined in § 102.1(g). For example, cattle born and raised in Texas are wholly obtained or produced in the United States. If the good is not wholly obtained or produced in a single country, paragraph (a)(2) provides that the country of origin can be the country in which the good is produced exclusively from domestic materials. For example, if a desk is produced in Canada from Canadian lumber and from hardware produced in Canada from imported steel, which under part 102, became a product of Canada, the desk is produced in Canada "exclusively from domestic materials." If, however, a good is neither wholly obtained or produced in a single country, nor produced in a country exclusively from domestic materials, the country of origin of a good may be determined to be the country in which the foreign materials contained in the good met the requirements of the specific rules provided under § 102.20 for the good. For example, imported textile rubberized thread classified under heading 5604, Harmonized Tariff Schedule of the United States (HTSUS), which is produced in Mexico from synthetic yarn of Taiwanese origin (classified under heading 5509, HTSUS) and from Malaysian rubber thread (classified under heading 4007, HTSUS) is a product of Mexico. The rule under § 102.20 that is applicable to the imported good (heading 5604, HTSUS) states: "A change to heading 5602 through 5605 from a heading outside that group." Since the non-Mexican origin (i.e., foreign) materials contained in the good were classified in headings outside the group of headings 5602 through 5605, HTSUS, a change from these materials to the textile rubberized thread in heading 5604, HTSUS, is allowed, and the country in which this change occurred, i.e., Mexico, is the country of origin.

Paragraphs (b) through (d) of § 102.11, set forth the circumstances and criteria for determining the country of origin of goods when such determination cannot be made pursuant to § 102.11(a). Under current practice and case law, if a good is not wholly obtained or produced in a single country and the processes to which the foreign materials in the good were subjected, did not result in a substantial transformation of such materials, country of origin generally is determined on the basis of the component or material which imparts the essential character of the good. Consistent with current practice in this regard, paragraph (b) of § 102.11 provides that unless the good is classified under the HTSUS as a "set", the country or countries of origin of the good is the country or countries of origin of the single material that imparts the essential character of the good. This paragraph further provides that if the single material imparting the essential character to the good is fungible and commingled, the country of origin may be determined on the basis of an inventory management method, such as ("FIFO" or "LIFO") as provided under

the Appendix to part 181 of the Customs Regulations.

Paragraph (c) of § 102.11 reflects current practice whereby multiple countries of origin may exist for goods that are classified as "sets", and for goods classified as "mixtures" or "composite goods" to which no single component can be found to impart their essential character. However, only the countries of origin of the materials meriting equal consideration for determining the essential character of the good would constitute the country or countries of origin of the good. For example, the countries of origin of a cutlery and dinnerware packaged set from Mexico, which includes 12 knives from Mexico, 12 forks from Korea, 12 spoons from Taiwan, and a plastic case from Japan would be as follows: Mexico, Taiwan and Korea. The plastic case from Japan did not merit equal consideration in determining the essential character of the set.

If a good is not a set, mixture or composite good and the country of origin of the good is not determined under paragraphs (a) and (b) of § 102.11, paragraph (d) provides that the country of origin of the good is the last country in which the good underwent production, other than "minor processing" as defined in § 102.1(l) or "simple assembly" as defined in § 102.1(h), unless the assembled materials originate in different countries. In the latter instance, the country of origin, indeed, will be the country of assembly even if the assembly was simple. It is important to note, however, that the determination of country of origin on the basis of the country in which a "simple assembly" has occurred, will only be reached after it has been concluded that no single material imparts the essential character to the good and the good is not classified as a set, mixture or composite good under the HTSUS.

Section 102.12 Fungible Goods

Section 102.12 sets forth the requirement that in all cases, the country of origin of commingled fungible goods (e.g., Canadian and Russian wheat or U.S. and Mexican raw or frozen corn), shall be the country or countries of origin of all of the commingled goods. If, however, direct physical identification of the country of origin is impractical, as in § 102.11(b)(2), this section allows the country or countries of origin to be determined on the basis of an inventory management method provided under the Appendix to part 181 of the Customs Regulations.

Section 102.13 De Minimis

Section 102.13 also codifies a common practice in country of origin determinations based upon the substantial transformation rule, whereby foreign materials of de minimis amounts are disregarded in determinations of whether the processing of foreign materials resulted in "a new and different article." Similarly, § 102.13 provides that foreign materials, which do not meet the requirements of the specific tariff rules under § 102.20 and which do not exceed the specified minimum values or quantities, shall be disregarded for purposes of determining whether the requirements of § 102.18 are met. Of note, however, is the fact that this provision will not apply to many food and agricultural products provided in the first several chapters of the HTSUS.

Section 102.14 Goods Returned

Note 2(a), Subchapter II, Chapter 98, HTSUS, provides that goods of U.S. origin which are exported from, and returned to, the United States after having been advanced in value or improved in condition by any process of manufacture or other means are to be treated as "foreign articles" and subject to full duty upon return to the United States, unless otherwise exempt under that subchapter. Section 102.14 incorporates this rule of law into the general context of the rules of origin. Under this section, any good which is advanced in value or improved in condition outside of the United States shall not be considered a product of the United States. Rather, the last foreign country in which "production" occurred is the country of origin of such goods. The terms "production," "advanced in value," and "improved in condition" are defined in § 102.1. For example, unassembled T-shirt components of U.S. origin, which are exported to Mexico for assembly into T-shirts (an advancement in value and/or improvement in condition), upon return are goods of Mexico, notwithstanding that under §§ 102.11(a) and 102.20, the country of origin of the assembled T-shirts would have been determined to be of U.S. origin. Of particular note, is the fact that when § 102.14 is applicable, it is the basis for determining origin, notwithstanding any other provision of part 102.

In connection with this provision, certain provisions of part 134 ("Country of Origin Marking") of this Chapter are amended. Section 134.43 is amended to allow special types of marking of goods for which country of origin is determined under this provision. In addition, § 134.32 is amended to except from country of origin marking requirements, non-textile goods that are exported from and returned to the United States after having been advanced in value and improved in condition as a result of repairs and alterations.

Section 102.15 Disregarded Materials

This section reflects existing practice by identifying those materials normally associated with a good, which are routinely disregarded in determining whether the good is a new and different article of commerce. Section 102.15 codifies existing practice by specifying those insignificant materials such as, packaging, accessories that are classified with the good, etc., which should be disregarded when determining whether or not the specific tariff rules under § 102.20 have been met.

Section 102.16 Goods and Its Parts; Parts of Parts

This section is intended to reconcile the new rules based upon the tariff classification approach with the systemic problems that arise when a good and its parts are classified in the same HTSUS heading or subheading or where there exist a specific tariff classification for parts which can include anything from the most minor or insignificant part to the most highly developed subassembly. In these instances, this section proposes to allow country of origin determinations to be made on a case-by-case basis, as they are now. Thus, when the specific tariff classification rule cannot be met because the good and its parts are classified in the same heading or subheading, this rule will allow significant operations to be recognized as conferring origin, when such operations result in new and different article, having a new name, character, and use. Of note is the fact that this section does not apply to textile and apparel goods (chapters 50–63, HTSUS).

Section 102.17 Non-Qualifying Operations

This section reflects existing practice not to allow simple operations which do not materially alter the good to cause a change in the country of origin of the good, even though there may have been a change in some minor aspect of the good. For example, simple packaging of components of a set without the manufacture of any of such components will not be allowed to make the country of origin of the set, the country in which the packaging occurred, even if requirements under the specific rules set forth in § 102.20 were met. Also of

note in this provision is the anti-circumvention rule, which disqualifies any operation, the sole object of which is to circumvent the proper operation of these rules. In such instances, the operation usually will be viewed as one having no practical business purpose and resulting in no material change in the good.

Section 102.18 Rules of Interpretation

This section provides the interpretation of two concepts that are common in the operation of these rules: *Essential Character* and *General Rules of Interpretation 2(a).*

The General Rule of Interpretation (GRI) 2(a) of the HTSUS generally provides that any reference in a heading to an article shall be taken to include a reference to that article incomplete or unfinished, provided that, as entered, the incomplete or unfinished article has the essential character of the complete or finished article (or failing to be classified as complete finished by virtue of this rule), entered unassembled or disassembled.

Paragraph (a) clarifies that when GRI 2(a) is stated as a condition or *proviso* in a specific rule, such proviso will operate to disallow changes from a part to a unfinished good or to an unassembled good which is classified as the good pursuant to GRI 2(a). Such changes in classification can occur as a result of simple operations or as a result of collecting all of the parts for a good in a single country and such collection is classified as the good in its unassembled state pursuant to GRI 2(a). You will note that the GRI 2(a) proviso appears more often in the specific tariff rules for the machinery chapters, and that this rule is specifically applicable to all of the specific rules for chapters 84 and 85, HTSUS.

Paragraph (b) regarding "essential character" is included in the Rules of Interpretation and not under § 102.1 Definitions, because of its significant place in the hierarchy of these rules. It is the "essential character" concept which is used to determine country of origin, whenever a good is not wholly obtained or produced in a single country or does not meet the specific tariff rules in § 102.20. For purposes of promoting uniformity in these determinations, this provision includes as examples, the specific factors identified in the Explanatory Notes for General Rule of Interpretation 3(b) of the HTSUS, which have been applied for nearly five years. Of particular note, however, is the fact that this provision expressly requires that one first look to the origin of the material that did not meet the requirement under the specific rules in determining which material imparts the "essential character" of a good. If there is a single material that imparts the essential character of a good and that material originates in a single country, then by operation of § 102.11(b), the country of origin of that material, will be the country of origin of the good, unless the good is classified as a set.

Section 102.19 NAFTA Preference Override

This provision is only applicable to goods for which a claim for duty preference under the NAFTA has been made. Thus, if a good is not covered by a NAFTA certificate of origin, this provision is not applicable in any way. The provision ensures that in the event that the application of the rules under § 102.11 (a) or (b) results in a good not being determined to be a good of a single NAFTA party (Mexico, Canada or United States), the country of origin of such good, if claimed for NAFTA preference, will be the last NAFTA country in which the good underwent any "production" other than "minor processing". Both "production" and "minor processing" are defined in § 102.1.

Section 102.20 Specific Tariff Rules

Section 102.20 presents the specific tariff classification changes and/or other operations, which are specifically required in order for country of origin to be determined on the basis of operations performed on the foreign materials contained in a good. This section, which is applicable only to goods that are not "wholly obtained or produced entirely in a single country" or are not produced in a single country exclusively from domestic materials, codifies the current "substantial transformation" standard. The rules in this section are set forth for each HTSUS chapter. The applicable rule is determined by the HTSUS tariff classification that is applicable to the finished good at the time the country of origin determination is being made. The specific rules for certain HTSUS chapters contain notes which govern the operation of the rules specified thereunder. See, for example, § 102.20(k), the specific tariff rules for section XI—Chapters 50–63, HTSUS, and § 102.20(f), the specific tariff rules for certain chemical chapters in Section VI, HTSUS.

Finally, it is important to note the specific rules do not operate in a vacuum. All of these rules are subject to the restrictions which appear in other sections of this part, such as § 102.17 "Non-Qualifying Operations" and section 102.14 "Goods Returned."

Comments

Before adopting these interim regulations as a final rule, consideration will be given to any written comments timely submitted to Customs. Comments submitted will be available for public inspection in accordance with the Freedom of Information Act (5 U.S.C. 552), § 1.4, Treasury Department Regulations (31 CFR 1.4), and § 103.11(b), Customs Regulations (19 CFR 103.11(b)), on regular business days between the hours of 9 a.m. and 4:30 p.m. at the Regulations Branch, Office of Regulations and Rulings, U.S. Customs Service, Franklin Court, 1099 14th Street, NW., Suite 4000, Washington, DC.

Comments submitted in response to this **Federal Register** document, need not be duplicated in response to the Notice of Proposed Rulemaking document relating to the Rules of Origin published in today's **Federal Register**. Comments in response to one document will be considered during the review of both documents.

Inapplicability of Notice and Delayed Effective Date Requirements, the Regulatory Flexibility Act, and Executive Order 12866

Pursuant to the provisions of 5 U.S.C. 553(a), public notice is inapplicable to these interim regulations because they are within the foreign affairs function of the United States. A failure to have regulations in place, setting forth the procedures implementing the preferential tariff treatment and related provisions of the North American Free Trade Agreement, on the date the North American Free Trade Agreement Implementation Act is effective, January 1, 1994, would provoke undesirable international consequences. In addition, because these regulations establish procedures which the public needs to know in order to claim the benefit of a tariff preference under the North American Free Trade Agreement Implementation Act, it is determined pursuant to 5 U.S.C. 553(b)(B), that notice and public procedures are impracticable, unnecessary, and contrary to the public interest. Furthermore, for the above reasons, it is determined that good cause exists under the provisions of 5 U.S.C. 553 (d)(1) and (d)(3) for dispensing with a delayed effective date. Because no notice of proposed rulemaking is required for interim regulations, the provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) do not apply. Because this document involves a foreign affairs

function of the United States and implements an international agreement, it is not subject to the provisions of E.O. 12866.

List of Subjects

19 CFR Part 12

Customs duties and inspection, Labeling, Marking, Reporting and recordkeeping requirements, Textiles and textile products.

19 CFR Part 102

Customs duties and inspections, Imports, Reporting and recordkeeping requirements, Rules of origin, Trade agreements.

19 CFR Part 134

Country of origin, Customs duties and inspection, Imports, Labeling, Marking, Packaging and containers.

Amendments to the Regulations

For the reasons set forth above, chapter 1 of title 19, Code of Federal Regulations (19 CFR chapter 1) is amended by adding part 102 and amending parts 12 and 134 as set forth below:

PART 12—SPECIAL CLASSES OF MERCHANDISE

1. The general authority citation for part 12 continues to read as follows:

Authority: 5 U.S.C. 301, 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1304, 1624.

2. In § 12.130:

a. paragraph (b) is amended by adding a sentence at the end;

b. paragraph (d) is amended by adding a sentence at the end of the introductory text; and

c. paragraph (e)(1) is amended by removing the word "An" and adding, in its place, the words "Except for products of which the origin is Canada or Mexico (the origin of such products is determined pursuant to the procedures set forth in Part 102 of this chapter), an".

The additions read as follows:

§ 12.130 Textiles and textile products country of origin.

* * * * *

(b) *Country of origin.* * * * However, the origin of products of Canada and Mexico are determined pursuant to the procedures set forth in part 102 of this chapter.

* * * * *

(d) *Criteria for determining country of origin.* * * * However, the origin of products of Canada and Mexico are determined pursuant to the procedures set forth in part 102 of this chapter.

* * * * *

3. A new part 102 is added to read as follows:

PART 102—RULES OF ORIGIN

Sec.
102.0 Scope.

Subpart A—General

102.1 Definitions.

Subpart B—Rules of Origin

102.11 General rules.
102.12 Fungible goods.
102.13 De Minimis.
102.14 Goods returned.
102.15 Disregarded materials.
102.16 Goods and its parts; parts of parts.
102.17 Non-qualifying operations.
102.18 Rules of interpretation.
102.19 NAFTA preference override.
102.20 Specific rules by tariff classification.

Authority: 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1624, and the North American Free-Trade Agreement Implementation Act, Pub.L. 103–182, 107 Stat. 2057.

§ 102.0 Scope.

This part sets forth rules for determining the country of origin of imported goods, i.e., when a good is a good of a party for the purposes specified in paragraph 1 of Annex 311 of the North American Free-Trade Agreement ("NAFTA"). These specific purposes are: (1) Country of origin marking; (2) determining the rate of duty and staging category applicable to originating textile and apparel goods as set out in Section 2 (Tariff Elimination) of Annex 300–B (Textile and Apparel Goods); (3) determining the rate of duty and staging category applicable to an originating good as set out in Annex 302.2 (Tariff Elimination).

Subpart A—General

§ 102.1 Definitions.

(a) *Advanced in Value.* "Advanced in value" means an increase in the value of a good as a result of production with respect to that good.

(b) *Commingled.* "Commingled" means physically combined or mixed.

(c) *Direct Physical Identification.* "Direct physical identification" means identification by visual or other organoleptic examination.

(d) *Domestic Material.* "Domestic material" means a material whose country of origin as determined under these rules is the same country as the country in which the good is produced.

(e) *Foreign Material.* "Foreign material" means a material whose country of origin as determined under these rules is not the same country as the country in which the good is produced.

(f) *Fungible Goods or Fungible Materials.* "Fungible goods or fungible materials" means goods or materials that are interchangeable for commercial purposes and whose properties are essentially identical.

(g) *A Good Wholly Obtained or Produced.* "A good wholly obtained or produced" in a country means:

(1) A mineral good extracted in that country;

(2) A vegetable or plant good harvested in that country;

(3) A live animal born and raised in that country;

(4) A good obtained from hunting, trapping or fishing in that country;

(5) A good (fish, shellfish and other marine life) taken from the sea by vessels registered or recorded with that country and flying its flag;

(6) A good produced on board factory ships from the goods referred to in paragraph (g)(5) of this section, provided such factory ships are registered or recorded with that country and fly its flag;

(7) A good taken by that country or a person of that country from the seabed or beneath the seabed outside territorial waters, provided that country has rights to exploit such seabed;

(8) A good taken from outer space, provided they are obtained by that country or a person of that country;

(9) Waste and scrap derived from.

(i) Production in a country, or

(ii) Used goods collected in that country provided such goods are fit only for the recovery of raw materials; and

(10) A good produced in that country exclusively from goods referred to in paragraphs (g)(1) through (10) of this section or from their derivatives, at any stage of production.

(h) *Harmonized System.* "Harmonized System" means the Harmonized Commodity Description and Coding System, including its general rules of Interpretation, Section Notes and Chapter Notes, as adopted and implemented by the United States.

(i) *Improved in Condition.* "Improved in condition" means the enhancement of the physical condition of a good as a result of production with respect to that good.

(j) *Incorporated.* "Incorporated" means physically incorporated into a good as a result of production with respect to that good.

(k) *Indirect Materials.* "Indirect materials" means a good used in the production, testing or inspection of another good but not physically incorporated into that other good, or a

good used in the maintenance of buildings or the operation of equipment associated with the production of that other good, including:

(1) Fuel and energy;

(2) Tools, dies and molds;

(3) Spare parts and materials used in the maintenance of equipment and buildings;

(4) Lubricants, greases, compounding materials and other materials used in production or used to operate equipment and buildings;

(5) Gloves, glasses, footwear, clothing, safety equipment and supplies;

(6) Equipment, devices, and supplies used for testing or inspecting the goods;

(7) Catalysts and solvents; and

(8) Any other goods that are not incorporated into the good but whose use in the production of the good can reasonably be demonstrated to be a part of that production.

(l) *Material.* "Material" means a good that is incorporated into another good as a result of production with respect to that other good, and includes parts, ingredients, subassemblies, and components.

(m) *Minor processing.* "Minor processing" means the following:

(1) Mere dilution with water or another substance that does not materially alter the characteristics of the good;

(2) Cleaning, including removal of rust, grease, paint, or other coatings;

(3) Application of preservative or decorative coatings, including lubricants, protective encapsulation, preservative or decorative paint, or metallic coatings;

(4) Trimming, filing or cutting off small amounts of excess materials;

(5) Unloading, reloading or any other operation necessary to maintain the good in good condition;

(6) Putting up in measured doses, packing, repacking, packaging, repackaging;

(7) Testing, marking, sorting, or grading;

(8) Ornamental or finishing operations incidental to textile good production designed to enhance the marketing appeal or the ease of care of the product, such as dyeing and printing, embroidery and appliques, pleating, hemstitching, stone or acid washing, permanent pressing, or the attachment of accessories notions, findings and trimmings; or

(9) Repairs and alterations, washing, laundering, or sterilizing.

(n) *Production.* "Production" means growing, mining, harvesting, fishing, trapping, hunting, manufacturing, processing or assembling a good.

(o) *Simple Assembly.* "Simple assembly" means the fitting together of five or fewer parts all of which are foreign (excluding fasteners such as screws, bolts, etc.) by bolting, gluing, soldering, sewing or by other means without more than minor processing.

(p) *Substantial Transformation.* "Substantial transformation" means production which results in a new and different article, with a new name, character, and use.

(q) *Value.* "Value" means, with respect to § 102.13,

(1) In the case of a good, its customs value or transaction value within the meaning of the Appendix to part 181 of this chapter; or

(2) In the case of a material, its customs value or value within the meaning of the Appendix to part 181 of this chapter.

Subpart B—Rules of Origin

§ 102.11 General rules.

(a) The country of origin of a good is the country in which:

(1) The good is wholly obtained or produced;

(2) The good is produced exclusively from domestic materials; or

(3) Each foreign material incorporated in that good undergoes an applicable change in tariff classification set out in § 102.20 and satisfies any other applicable requirements of that section, and all other applicable requirements of these rules are satisfied.

(b) Except for a good that is specifically described in the Harmonized System as a set, or is classified as a set pursuant to General Rule of Interpretation 3, where the country of origin cannot be determined under paragraph (a), the country of origin of the good:

(1) Is the country or countries of origin of the single material that imparts the essential character of the good, or

(2) If the material that imparts the essential character of the good is fungible, has been commingled, and direct physical identification of the origin of the commingled material is not practical, the country or countries of origin may be determined on the basis of an inventory management method provided under the Appendix to part 181 of the Customs Regulations.

(c) Where the country of origin cannot be determined under paragraph (b)(1) or (2) and the good is specifically described in the Harmonized System as a set or mixture, or classified as a set, mixture or composite good pursuant to General Rule of Interpretation 3, the country of origin of the good is the country or countries of origin of all materials that merit equal consideration for determining the essential character of the good.

(d) Where the country of origin of a good cannot be determined under paragraph (b) (1) through (3), the country of origin of the good is:

(1) The last country in which the good underwent production, other than by simple assembly or minor processing, or

(2) If the good is produced by simple assembly:

(i) The country in which the good is assembled if the parts that merit equal consideration as imparting the essential character of the good do not have the same country of origin, or

(ii) The country of origin of the parts assembled into the good that merit equal consideration as imparting the essential character of the good if all those parts have the same country of origin.

§ 102.12 Fungible goods.

When fungible goods of different countries of origin are commingled the country of origin of the goods:

(a) Is the countries of origin of those commingled goods; or

(b) If the good is fungible, has been commingled, and direct physical identification of the origin of the commingled good is not practical, the country or countries of origin may be determined on the basis of an inventory management method provided under the Appendix to part 181 of the Customs Regulations.

§ 102.13 De Minimis.

(a) Except as otherwise provided in paragraphs (b) and (c), foreign materials that do not undergo the applicable change in tariff classification set out in § 102.20 or satisfy the other applicable requirements of that section when incorporated into a good shall be disregarded in determining the country of origin of the good if the value of those materials is no more than 7 percent of the value of the good or 10 percent of the value of a good of Chapter 22, Harmonized System.

(b) Paragraph (a) does not apply to a foreign material incorporated in a good provided for in Chapters 1, 2, 3, 4, 7, 8, 11, 12, 15, 17, or 20 of the Harmonized System.

(c) Foreign components or materials that do not undergo the applicable change in tariff classification set out in § 102.20 or satisfy the other applicable requirements of that section when incorporated into a good classified in Chapter 50 through 63 of the Harmonized System shall be disregarded in determining the country of origin of the good if the total weight of those components or materials is not more than 7 percent of the total weight of the good.

§ 102.14 Goods returned.

No good, last advanced in value or improved in condition outside the United States has United States origin. If under either § 102.11 or 102.16 such a good is determined to be a good of the United States, that determination will be disregarded and the country of origin of the good will be the last foreign country in which the good underwent production, other than minor processing. However, if the good undergoes only minor processing outside the United States, the country of origin of the good is the last country in which the good underwent production, including minor processing.

§ 102.15 Disregarded materials.

(a) The following materials shall be disregarded when determining whether the good undergoes the applicable change in tariff classification set out in § 102.20, or satisfies the other applicable requirements of that section:

(1) Packaging materials and containers in which a good is packaged for retail sale that are classified with the good;

(2) Accessories, spare parts or tools delivered with the good that are classified with the good and shipped with the good;

(3) Packing materials and containers in which a good is packed for shipment; and

(4) Indirect materials.

§ 102.16 Good and its parts; parts of parts.

(a) If a good is produced in one country but one or more of the foreign materials incorporated into the good do not undergo an applicable change in tariff classification provided in § 102.20 because:

(1) The good was imported into the country in an unassembled or disassembled form but was classified as an assembled good pursuant to General Rule of Interpretation 2(a) of the Harmonized System, the country of origin of a good is the country in which the good was produced provided that the production of the good results in a substantial transformation of those parts; or

(2) The heading for the good provides for both the good itself and its parts and is not further subdivided into subheadings, or the subheading for the good provides for both the good itself and its parts, the country of origin of a good is the country in which the good was produced provided that the production of the good results in a substantial transformation of those parts.

(b) If a subassembly and its parts are classified together in a parts heading that is not further subdivided into subheadings or in a parts subheading, the country of origin of the subassembly is the country in which the subassembly is produced, provided, that production results in a substantial transformation.

(c) This section does not apply to chapters 50–63, Harmonized System.

§ 102.17 Non-qualifying operations.

A foreign material shall not be considered to have undergone the applicable change in tariff classification set out in § 102.20, or satisfy the other applicable requirements of that Section by reason of:

(a) A change in end-use;

(b) Dismantling or disassembly;

(c) Simple packing, repacking or retail packaging without more than minor processing;

(d) Mere dilution with water or another substance that does not materially alter the characteristics of the material; or

(e) Any process or work in respect of which it may be demonstrated, on the basis of the preponderance of evidence, that the sole object was to circumvent these rules.

§ 102.18 Rules of interpretation.

(a) *General Rule of Interpretation 2(a).* (1) When General Rule of Interpretation 2(a) is stated under a rule for a good in § 102.20 as a basis for disallowing a specific change in tariff classification under that rule this means the change will be disallowed if it is made from one tariff provision to another by virtue of:

(i) The collection of parts being classified as if it were an assembled good pursuant to General Rule of Interpretation 2(a); or

(ii) The assembly of parts into a subassembly that is still not a complete or finished good, but is classified as a complete or finished good pursuant to General Rule of Interpretation 2(a).

(2) Paragraph (a) shall not apply to assembled goods that were previously assembled into a good, and then disassembled for convenience of packing, handling or transport.

(b) *Essential Character.* (1) For purposes of determining essential character of a good under § 102.11, various factors may be examined depending upon the type of the good. These include one or more of the following:

(i) The nature of the material or component;

(ii) Bulk;

(iii) Quantity;

(iv) Weight;

(v) Value;

(vi) Role of a constituent material in relation to the use of the goods; or

(vii) Other relevant factors.

(2) For purposes of applying § 102.11, only domestic and foreign materials (including self-produced materials) that are classified in a tariff provision from which a change in tariff classification is not allowed in the rule for the good set out in § 102.20 shall be taken into consideration in determining the parts or materials that determine the essential character of the good.

§ 102.19 NAFTA preference override.

Notwithstanding any provision of these rules other than § 102.11(a) or (b) or § 102.14, if a good originates under Chapter Four of the NAFTA, and the country of origin of that good is not determined to be a single NAFTA country under § 102.11(a) or (b), the country of origin of the good is the last NAFTA country in which the good underwent production other than minor processing, provided that a Certificate of Origin has been completed and signed for the good.

§ 102.20 Specific rules by tariff classification.

The following rules are the rules specified in § 102.11(a)(3) and other sections of this part:

HTSUS	Tariff shift and/or other requirements
(a)	**Section I: Chapters 1 through 5**
01.01–01.06	A change to heading 01.01 through 01.06 from any other chapter.
02.01–02.09	A change to heading 02.01 through 02.09 from any other chapter.
0210.11–0210.20	A change to subheading 0210.11 through 0210.20 from any other chapter.
0210.90	A change to subheading 0210.90 from any other chapter; or A change to edible meals and flours of subheading 0210.90 from any product other than edible meals and flours of chapter 2.
03.01–03.03	A change to heading 03.01 through 03.03 from any other chapter.
03.04	A change to heading 03.04 from any other chapter; or

HTSUS	Tariff shift and/or other requirements
	A change to fillets of heading 03.04 from any other heading.
0305.10	A change to subheading 0305.10 from any other subheading.
0305.20	A change to subheading 0305.20 from any other chapter.
0305.30	A change to subheading 0305.30 from any other subheading.
0305.41–0305.69	A change to subheading 0305.41 through 0305.69 from any other chapter; or
03.06	A change to heading 03.06 from any other chapter.
03.07	A change to heading 03.07 from any other chapter; or
	A change to edible meals and flours from within Chapter 3.
04.01	A change to heading 04.01 from any other chapter.
0402.10–0402.29	A change to subheading 0402.10 through 0402.29 from any other chapter.
0402.91–0402.99	A change to subheading 0402.91 through 0402.99 from any other chapter.
0403.10	A change to subheading 0403.10 from any other subheading.
0403.990	A change to subheading 0403.90 from any other chapter; or
	A change to sour cream, or kephir from any other product of Chapter 4.
0404	A change to heading 0404 from any other heading.
0405–0406	A change to heading 0405 through 0406 from any other heading, including another heading within that group.
0407–0410	A change to heading 0407 through 0410 from any other chapter.
05.01–05.11	A change to heading 05.01 through 05.11 from any other chapter.
(b)	**Section II: Chapters 6 through 14**

Note: Nothwithstanding the specific rules of this section, an agricultural or horticultural good grown in the territory of a country shall be treated as a good of that country even if grown from seed or bulbs, root stock, cuttings, slips or other live parts of plants, imported from a foreign country.

06.01–06.02	A change to heading 06.01 through 06.02 from any other heading, including another heading within that group.
06.03–06.04	A change to heading 06.03 through 06.04 from any other heading, including another heading within that group, except from heading 06.02.
07.01–07.09	A change to heading 07.01 through 07.09 from any other chapter.
07.10	A change to heading 07.10 from any other chapter.
07.11	A change to heading 07.11 from any other chapter.
07.12	A change to heading 07.12 from any other chapter, or
	A change to powdered vegetables of 07.12 from any other product of chapter 7, if put up for retail sale.
07.13–07.14	A change to heading 07.13 through 07.14 from any other chapter.
08.01–08.10	A change to heading 08.01 through 08.10 from any other chapter.
08.11	A change to heading 08.11 from any other chapter.
08.12	A change to heading 08.12 from any other chapter.
08.13	A change to heading 08.13 from any other chapter.
08.14	A change to heading 08.14 from any other chapter.
0901.11–0901.12	A change to subheading 0901.11 through 0901.12 from any other chapter.
0901.21–0901.22	A change to subheading 0901.21 through 0901.22 from any subheading outside that group.
0901.30	A change to subheading 0901.30 from any other chapter.
0901.40	A change to subheading 0901.40 from any other chapter.
09.02–09.03	A change to heading 09.02 through 09.03 from any other chapter.
09.04–09.10	A change to heading 09.04 through 09.10 from any other chapter, or
	A change to crushed, ground, or powdered products of heading 09.04 through 09.10 from within chapter 9, if put up for retail sale; or
	A change to subheading 0910.91 from any other subheading, provided that a single spice ingredient of foreign origin constitutes no more than 60 percent by weight of the good.
10.01–10.08	A change to heading 10.01 through 10.8 from any other chapter.
11.01–11.06	A change to heading 11.01 through 11.06 from any other chapter.
11.07	A change to heading 11.07 from any other chapter.
11.08–11.09	A change to heading 11.08 through 11.09 from any other heading, including another heading within that group.
12.01–12.07	A change to heading 12.01 through 12.07 from any other chapter.
12.08	A change to heading 12.08 from any other heading.
12.9–12.14	A change to heading 12.09 through 12.14 from any other chapter.
13.01–13.02	A change to heading 13.01 through 13.02 from any other chapter.
14.01–14.04	A change to heading 14.01 through 14.04 from any other chapter.
(c)	**Section III: Chapter 15**
15.01–15.06	A change to heading 15.01 through 15.06 from any other chapter.
1507.10	A change to subheading 1507.10 from any other chapter.
1507.90	A change to subheading 1507.90 from any other chapter.
1508.10	A change to subheading 1508.10 from any other chapter.
1508.90	A change to subheading 1508.90 from any other chapter.
1509.10	A change to subheading 1509.10 from any other chapter.
1509.90	A change to subheading 1509.90 from any other chapter.
15.10	A change to heading 15.10 from any other chapter.
1511.10	A change to subheading 1511.10 from any other chapter.
1511.90	A change to subheading 1511.90 from any other chapter.
1512.11	A change to subheading 1512.11 from any other chapter.
1512.19	A change to subheading 1512.19 from any other chapter.
1512.21	A change to subheading 1512.21 from any other chapter.

HTSUS	Tariff shift and/or other requirements
1512.29	A change to subheading 1512.29 from any other chapter.
1513.11	A change to subheading 1513.11 from any other chapter.
1513.19	A change to subheading 1513.19 from any other chapter.
1513.21	A change to subheading 1513.21 from any other chapter.
1513.29	A change to subheading 1513.29 from any other chapter.
1514.10	A change to subheading 1514.10 from any other chapter.
1514.90	A change to subheading 1514.90 from any other chapter.
1515.11	A change to subheading 1515.11 from any other chapter.
1515.19	A change to subheading 1515.19 from any other chapter.
1515.21	A change to subheading 1515.21 from any other chapter.
1515.29	A change to subheading 1515.29 from any other chapter.
15.16	A change to heading 15.16 from any other chapter.
1517.10	A change to subheading 1517.10 from any other heading.
1517.90	A change to subheading 1517.90 from any other chapter.
1518	A change to heading 15.18 from any other heading.
1519.11–1519.13	A change to subheading 1519.11 through 1519.13 from any other heading, except from heading 15.20.
1519.19	A change to subheading 1519.19 from any other subheading.
1519.20	A change to subheading 1519.20 from any other heading, except from heading 15.20.
1520.10	A change to subheading 1520.10 from any other heading, except from heading 15.19.
1520.90	A change to subheading 1520.90 from any other subheading.
15.21–15.22	A change to heading 15.21 through 15.22 from any other chapter.
(d)	**Section IV: Chapters 16 through 24**
16.01–16.05	A change to heading 16.01 through 16.05 from any other chapter.
17.01–17.02	A change to heading 17.01 through 17.02 from any other chapter.
17.03	A change to heading 17.03 from any other chapter.
17.04	A change to heading 17.04 from any other heading.
18.01–18.03	A change to heading 18.01 through 18.03 from any other chapter.
18.04	A change to heading 18.04 from any other heading, except from heading 1803.
18.05	A change to heading 18.05 from any other heading, except from subheading 1803.20.
1806.10	A change to subheading 1806.10 from any other heading except from heading 1805 or from Chapter 17; or
	A change from Chapter 17 provided that the good contains less than 65 percent by dry weight of sugar
1806.20	A change to subheading 1806.20 from any other heading except from Chapter 17; or
	A change from Chapter 17 provided that the good contains less than 65 percent by dry weight of sugar
1806.31	A change to subheading 1806.31 from any other subheading.
1806.32	A change to subheading 1806.32 from any other subheading.
1806.90	A change to subheading 1806.90 from any other subheading.
1901 10	A change to subheading 1901.10 from any other subheading.
1901.20	A change to subheading 1901.20 from any other subheading.
1901.90	A change to subheading 1901.90 from any other heading, or;
	A change to a product of subheading 1901.90 from any other product within heading 19.01 if that change results in a substantial transformation.
1902.11–1902.19	A change to subheading 1902.11 through 1902.19 from any other heading.
1902.20	A change to subheading 1902.20 from any other subheading.
1902.30–1902.40	A change to subheading 1902.30 through 1902.40 from any other heading.
19.03–19.05	A change to heading 19.03 through 19.05 from any other heading, including another heading within that group.

Chapter 20 Note: Notwithstanding the specific rules of this chapter, fruit, nut and vegetable preparations of Chapter 20 that have been prepared or preserved merely by freezing, by packing (including canning) in water, brine or natural juices, or by roasting, either dry or in oil (including processing incidental to freezing, packing, or roasting), shall be treated as a good of the country in which the fresh good was produced.

20.01–20.07	A change to heading 20.01 through 20.07 from any other chapter.
2008.11	A change to subheading 2008.11 from any other chapter, provided that change is not the result of mere blanching of peanuts.
2008.19–2008.99	A change to subheading 2008.19 through 2008.99 from any other chapter, [US provided that change is not the result of mere blanching of nuts].
2009.11–2009.30	A change to subheading 2009.11 through 2009.30 from any other chapter.
2009.40–2009.80	A change to subheading 2009.40 through 2009.80 from any other chapter.
2009.90	A change to subheading 2009.90 from any other chapter; or
	A change to subheading 2009.90 from any other subheading; provided that a single juice ingredient of foreign origin, or juice ingredients from a single foreign country, constitute in single strength form no more than 60 percent by volume of the good.
21.01	A change to heading 21.01 from any other heading.
21.02	A change to heading 21.02 from any other heading.
2103.10	A change to subheading 2103.10 from any other heading.
2103.20	A change to subheading 2103.20 from any other heading.
2103.30	A change to subheading 2103.30 from any other subheading; or
	A change to prepared mustard of subheading 2103.30 from mustard flour or meal.
2103.90	A change to subheading 2103.90 from any other subheading; or
	A change to any item of subheading 2103.90 from within subheading 2103.90, if that change results in a substantial transformation.
2104.10	A change to subheading 2104.10 from any other subheading.

HTSUS	Tariff shift and/or other requirements
2104.20	A change to subheading 2104.20 from any other subheading.
21.05	A change to heading 21.05 from any other heading.
2106.10	A change to subheading 2106.10 from any other subheading.
2106.90	A change to subheading 2106.90 from any other subheading except from Chapter 4, Chapter 17, heading 2009, subheading 1901.90 or subheading 2202.90; or
	A change to subheading 2106.90 from Chapter 4 or subheading 1901.90 provided that the good contains no more than 50 percent of milk solids by weight; or
	A change to subheading 2106.90 from Chapter 17 provided that the good contains less than 65 percent by dry weight of sugar; or
	A change to subheading 2106.90 from heading 2009 or subheading 2202.90 provided that a single juice ingredient of foreign origin, or juice ingredients from a single foreign country, constitute in single strength form no more than 60 percent by volume of the good.
22.01	A change to heading 22.01 from any other chapter.
2202.10	A change to sweetened and/or flavored waters of subheading 2202.10 from any other chapter; or
	A change to other beverages of subheading 2202.10 from any other heading.
2202.90	A change to subheading 2202.90 from any other subheading, except from Chapter 4 or heading 19.01, 20.09 or 21.06; or
	A change to subheading 2106.90 from Chapter 4 or heading 19.01 provided that the good contains no more than 50 percent of milk solids by weight; or
	A change to subheading 2202.90 from heading 20.09 or subheading 2106.90 provided that a single juice ingredient of foreign origin, or juice ingredients from a single foreign country, constitute in single strength form no more than 60 percent by volume of the good.
22.03	A change to heading 22.03 from any other heading.
2204.10–2204.29	A change to subheading 2204.10 through 2204.29 from any other subheading outside that group.
2204.30	A change to subheading 2204.30 from any other heading.
22.05	A change to heading 22.05 from any other heading, except from heading 22.04: or
	A change to vermouth of heading 22.05 from heading 2204.
22.06	A change to heading 22.06 from any other heading.
22.07	A change to heading 22.07 from any other heading except from heading 22.08.
2208.10–2208.50	A change to subheading 2208.10 through 2208.50 from any other subheading outside that group.
2208.90	A change to subheading 2208.90 from any other subheading, except from subheading 2208.10; or
	A change to cordials, liqueurs, kirschwasser or ratafia of subheading 2208.90 (2208.90.45) from any other product.
22.09	A change to heading 22.09 from any other heading.
23.01–23.08	A change to heading 23.01 through 23.08 from any other chapter.
2309.10	A change to subheading 2309.10 from any other heading.
2309.90	A change to subheading 2309.90 from any other heading, except from Chapter 4 or heading 1901, or
	A change to subheading 2309.90 from Chapter 4 or heading 1901 provided that the good contains no more than 50 percent of milk solids by weight.
24.01	A change to heading 24.01 from any other chapter.
24.02–24.03	A change to heading 24.02 through 24.03 from any other heading, including another heading within that group.
(e)	**Section V: Chapters 25 through 27**
25.01–25.16	A change to heading 25.01 through 25.16 from any other heading, including another heading within that group.
2517.10–2517.20	A change to heading 2517.10 through 2517.20 from any other heading.
2517.30	A change to subheading 2517.30 from any other subheading.
2517.41–2517.49	A change to heading 2517.41 through 2517.49 from any other heading.
25.18–25.30	A change to heading 25.18 through 25.30 from any other heading.
26.01–26.21	A change to heading 26.01 through 26.21 from any other heading, including another heading within that group.
(1)	For purposes of this chapter, a "*chemical reaction*" is defined as a process in which chemical bonds in molecules are broken and new chemical bonds are formed between the fragmented molecules and/or added elements so that one or more of the original bond/s no longer link the same chemical element/s or functional group/s.
2701–2706	A change to heading 2701 through 2706 from any other heading, including any heading within the group.
2707.10–2707.99	A change to subheading 2707.10 through 2707.99 from any other heading; or
	A change to subheading 2707.10 through 2707.99 from any other subheading, including any subheading within the group, provided that the good resulting from such change is the product of a "*chemical reaction*" as defined in Note 1.
2708–2709	A change to heading 2708 through 2709 from any other heading, including any heading within the group.
2710	A change to heading 2710 from any other heading; or
	A change to any good of heading 2710 from any other good of heading 2710, provided that the good resulting from such change is the product of a "*chemical reaction*" as defined in Note 1.
2711.11	A change to subheading 2711.11 from any other subheading, except from subheading 2711.21.
2711.12–2711.19	A change to subheading 2711.12 through 2711.19 from any other subheading, including any subheading within the group, except from subheading 2711.29.
2711.21	A change to subheading 2711.21 from any other subheading, except from subheading 2711.11.
2711.29	A change to subheading 2711.29 from any other subheading, except from subheading 2711.12 through 2711.21.
2712–2714	A change to heading 2712 through 2714 from any other heading, including any heading within the group.
2715	A change to heading 2715 from any other heading, except from heading 2714 or subheading 2713.20.
2716	A change to heading 2716 from any other heading.

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(f)	**Section VI: Chapters 28 through 38**

Notes: 1. Chemical reaction origin rule—

Any good of chapters 28, 29, 31, 32 or 38 that is the product of a chemical reaction shall be considered to be a good of the country in which the reaction occurred.

A chemical reaction is defined as a process in which chemical bonds in molecules are broken and new chemical bonds are formed between the fragmented molecules and/or added elements so that one or more of the original bond/s no longer link the same chemical element/s or functional group/s.

Notwithstanding any of the line-by-line rules, the "chemical reaction" rule may be applied to any good classified in the above chapters.

2. Separation Prohibition—

A foreign material/component will not be deemed to have satisfied all applicable requirements of these marking rules by reason of a change from one classification to another merely as the result of the separation of one or more individual materials or components from a man-made mixture unless the isolated material/component, itself, also underwent a chemical reaction.

2801.10–2801.30	A change to subheading 2801.10 through 2801.30 from any other subheading, including any subheading within the group.
2802	A change to heading 2802 from any other heading, except from heading 2503.
2803	A change to heading 2803 from any other heading.
2804.10–2804.50	A change to subheading 2804.10 through 2804.50 from any other subheading, including any subheading within the group.
2804.61–2804.69	A change to subheading 2804.61 through 2804.69 from any other subheading outside the group.
2804.70–2804.90	A change to subheading 2804.70 through 2804.90 from any other subheading, including any subheading within the group.
2805	A change to heading 2805 from any other heading.
2806.10–2806.20	A change to subheading 2806.10 through 2806.20 from any other subheading, including any subheading within the group.
2807–2808	A change to heading 2807 through 2808 from any other heading, including any heading within the group.
2809.10–2809.20	A change to subheading 2809.10 through 2809.20 from any other subheading, including any subheading within the group.
2810	A change to heading 2810 from any other heading.
2811.11	A change to subheading 2811.11 from any other subheading.
2811.19	A change to subheading 2811.19 from any other subheading, except from subheading 2811.22.
2811.21	A change to subheading 2811.21 from any other subheading.
2811.22	A change to subheading 2811.22 from any other subheading, except from subheading 2505.10, 2506.10, or 2811.19.
2811.23–2811.29	A change to subheading 2811.23 through 2811.29 from any other subheading, including any subheading within the group.
2812.10–2813.90	A change to subheading 2812.10 through 2813.90 from any other subheading, including any subheading within the group.
2814	A change to heading 2814 from any other heading.
2815.11–2815.12	A change to subheading 2815.11 through 2815.12 from any other subheading outside the group.
2815.20–2815.30	A change to subheading 2815.20 through 2815.30 from any other subheading, including any subheading within the group.
2816.10	A change to subheading 2816.10 from any other subheading.
2816.20	A change to subheading 2816.20 from any other subheading, except from subheading 2530.90.
2816.30	A change to subheading 2816.30 from any other subheading.
2817	A change to heading 2817 from any other heading, except from heading 2608.
2818.10–2818.30	A change to subheading 2818.10 through 2818.30 from any other subheading, including any subheading within the group, except from heading 2606 or subheading 2620.40.
2819.10–2819.90	A change to subheading 2819.10 through 2819.90 from any other subheading, including any subheading within the group.
2820.10–2820.90	A change to subheading 2820.10 through 2820.90 from any other subheading, including any subheading within the group, except from subheading 2530.90 or from heading 2602.
2821.10	A change to subheading 2821.10 from any other subheading.
2821.20	A change to subheading 2821.20 from any other subheading, except from subheading 2530.30, or 2601.11 through 2601.20.
2822	A change to heading 2822 from any other heading, except from heading 2605.
2823	A change to heading 2823 from any other heading.
2824.10–2824.90	A change to subheading 2824.10 through 2824.90 from any other subheading, including any subheading within the group, except from heading 2607.
2825.10–2825.40	A change to subheading 2825.10 through 2825.40 from any other subheading, including any subheading within the group.
2825.50	A change to subheading 2825.50 from any other subheading, except from heading 2603.
2825.60	A change to subheading 2825.60 from any other subheading, except from subheading 2615.10.
2825.70	A change to subheading 2825.70 from any other subheading, except from subheading 2613.10.
2825.80	A change to subheading 2825.80 from any other subheading, except from subheading 2617.10.
2825.90	A change to subheading 2825.90 from any other subheading, provided that the good of this subheading is the product of a "*chemical reaction*" as defined in Note 1.
2826.11–2833.19	A change to subheading 2826.11 through 2833.19 from any other subheading, including any subheading within the group.
2833.21	A change to subheading 2833.21 from any other subheading, except from subheading 2530.20.
2833.22–2833.26	A change to subheading 2833.22 through 2833.26 from any other subheading, including any subheading within the group.
2833.27	A change to subheading 2833.27 from any other subheading, except from subheading 2511.10.
2833.29	A change to subheading 2833.29 from any other subheading, except from heading 2520.

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2833.30–2833.40	A change to subheading 2833.30 through 2833.40 from any other subheading, including any subheading within the group.
2834.10–2834.29	A change to subheading 2834.10 through 2834.29 from any other subheading, including any subheading within the group.
2835.10–2835.25	A change to subheading 2835.10 through 2835.25 from any other subheading, including any subheading within the group.
2835.26	A change to subheading 2835.26 from any other subheading, except from heading 2510.
2835.29–2935.39	A change to subheading 2835.29 through 2835.39 from any other subheading, including any subheading within the group.
2836.10	A change to subheading 2836.10 from any other subheading.
2836.20	A change to subheading 2836.20 from any other subheading, except from subheading 2530.90.
2836.30–2836.40	A change in subheading 2836.30 through 2836.40 from any other subheading, including any subheading within the group.
2836.50	A change to subheading 2836.50 from any other subheading, except from heading 2509, subheading 2517.41 or 2517.49, heading 2521, or subheading 2530.90.
2836.60	A change to subheading 2836.60 from any other subheading, except from subheading 2511.20.
2836.70	A change to subheading 2836.70 from any other subheading, except from heading 2607.
2836.91	A change to subheading 2836.91 from any other subheading.
2836.92	A change to subheading 2836.92 from any other subheading, except from subheading 2530.90.
2836.93	A change to subheading 2836.93 from any other subheading, except from subheading 2617.90.
2836.99	A change to subheading 2836.99 from any other subheading, provided that the good of this subheading is the product of a "chemical reaction" as defined in Note 1.
2837.11–2837.20	A change to subheading 2837.11 through 2837.20 from any other subheading, including any subheading within the group.
2838	A change to heading 2838 from any other heading.
2839.11–2839.19	A change to subheading 2839.11 through 2839.19 from any other subheading, outside the group.
2839.20–2839.90	A change to subheading 2839.20 through 2839.90 from any other subheading, including any subheading within the group.
2840.11–2840.20	A change to subheading 2840.11 through 2840.20 from any other subheading outside the group, except from subheading 2528.10.
2840.30	A change to subheading 2840.30 from any other subheading.
2841.10–2841.40	A change to subheading 2841.10 through 2841.40 from any other subheading, including any subheading within the group.
2841.50	A change to subheading 2841.50 from any other subheading, except from heading 2610.
2841.60	A change to subheading 2841.60 from any other subheading.
2841.70	A change to subheading 2841.70 from any other subheading, except from subheading 2613.90.
2841.80	A change to subheading 2841.80 from any other subheading, except from heading 2611.
2841.90	A change to subheading 2841.90 from any other subheading, provided that the good of this subheading is the product of a "chemical reaction" as defined in Note 1.
2842.10	A change to subheading 2843.10 from any other subheading.
2842.90	A change to subheading 2842.90 from any other subheading, provided that the good of this subheading is the product of a "chemical reaction" as defined in Note 1.
2843.10	A change to subheading 2843.10 from any other subheading, except from heading 7106, 7108, 7110, or 7112.
2843.21–2843.29	A change to subheading 2843.21 through 2843.29 from any other subheading, including any subheading within the group.
2843.30–2843.90	A change to subheading 2843.30 through 2843.90 from any other subheading, including any subheading within the group, except from subheading 2616.90.
2844.10	A change to subheading 2844.10 from any other subheading, except from subheading 2612.10.
2844.20	A change to subheading 2844.20 from any other subheading.
2844.30	A change to subheading 2844.30 from any other subheading, except from subheading 2844.20.
2844.40–2844.50	A change to subheading 2844.40 through 2844.50 from any other subheading, including any subheading within the group.
2845	A change to heading 2845 from any other heading.
2846	A change to heading 2846 from any other heading, except from subheading 2530.90.
2847	A change to subheading 2847 from any other heading.
2848.10–2849.90	A change to subheading 2848.10 through 2849.90 from any other subheading, including any subheading within the group.
2850–2851	A change to heading 2850 through 2851 from any other heading, including any heading within the group.
2901.10–2901.90	A change to subheading 2901.10 through 2901.90 from any other subheading, including any subheading within the group, except from acyclic petroleum oils of heading 2710, or subheading 2711.13, 2711.14, 2711.19 or 2711.29.
2902.11	A change to subheading 2902.11 from any other subheading.
2902.19	A change to subheading 2902.19 from any other subheading, except from non-aromatic cyclic petroleum oils of subheading 2707.50, 2707.99, or heading 2710.
2902.20	A change to subheading 2902.20 from any other subheading, except from subheading 2707.10, 2707.50, or 2707.99.
2902.30	A change to subheading 2902.30 from any other subheading, except from subheading 2707.20, 2707.50, or 2707.99.
2902.41–2902.44	A change to subheading 2902.41 through 2902.44 from any other subheading, including any subheading within the group, except from subheading 2707.30, 2707.50 or 2707.99.
2902.50	A change to subheading 2902.50 from any other subheading.
2902.60	A change to subheading 2902.60 from any other subheading, except from subheading 2707.30, 2707.50, 2707.99, or heading 2710.00.
2902.70–2902.90	A change to subheading 2902.70 through 2902.90 from any other subheading, including any subheading within the group, except from subheading 2707.50, 2707.99 or heading 2710.
2903.11–2904.90	A change to subheading 2903.11 through 2904.90 from any other subheading, including any subheading within the group.

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2905.11–2905.21	A change to subheading 2905.11 through 2905.21 from any other subheading, including any subheading within the group.
2905.22–2905.29	A change to subheading 2905.22 through 2905.29 from any other subheading, including any subheading within the group, except from subheading 1301.90, 3301.90 or 3805.90.
2905.31–2905.50	A change to subheading 2905.31 through 2905.50 from any other subheading, including any subheading within the group.
2906.11	A change to subheading 2906.11 from any other subheading, except from subheading 3301.24 or 3301.25.
2906.12–2906.13	A change to subheading 2906.12 through 2906.13 from any other subheading, including any subheading within the group.
2906.14	A change to subheading 2906.14 from any other subheading, except from heading 3805.
2906.19	A change to subheading 2906.19 from any other subheading, except from subheading 3301.90 or 3805.90.
2906.21	A change to subheading 2906.21 from any other subheading.
2906.29	A change to subheading 2906.29 from any other subheading, except from subheading 2707.60 or 3301.90.
2907.11	A change to subheading 2907.11 from any other subheading, except from subheading 2707.60.
2907.12–2907.22	A change to subheading 2907.12 through 2907.22 from any other subheading, including any subheading within the group, except from subheading 2707.99.
2907.23	A change to subheading 2907.23 from any other subheading.
2907.29–2907.30	A change to subheading 2907.29 through 2907.30 from any other subheading, including any subheading within the group, except from subheading 2707.99.
2908	A change to heading 2908 from any other heading.
2909.11–2909.49	A change to subheading 2909.11 through 2909.49 from any other subheading, including any subheading within the group.
2909.50	A change to subheading 2909.50 from any other subheading, except from subheading 3301.90.
2909.60	A change to subheading 2909.60 from any other subheading.
2910.10–2910.90	A change to subheading 2910.10 through 2910.90 from any other subheading, including any subheading within the group.
2911	A change to heading 2911 from any other heading.
2912.11–2912.13	A change to subheading 2912.11 through 2912.13 from any other subheading, including any subheading within the group.
2912.19–2912.49	A change to subheading 2912.19 through 2912.49 from any other subheading, including any subheading within the group, except from subheading 3301.90.
2912.50–2912.60	A change to subheading 2912.50 through 2912.60 from any other subheading, including any subheading within the group.
2913	A change to heading 2913 from any other heading.
2914.11–2914.19	A change to subheading 2914.11 through 2914.19 from any other subheading, including any subheading within the group, except from subheading 3301.90.
2914.21–2914.22	A change to subheading 2914.21 through 2914.22 from any other subheading, including any subheading within the group.
2914.23	A change to subheading 2914.23 from any other subheading, except from subheading 3301.90.
2914.29	A change to subheading 2914.29 from any other subheading, except from subheading 3301.90 or 3805.90.
2914.30–2914.70	A change to subheading 2914.30 through 2914.70 from any other subheading, including any subheading within the group, except from subheading 3301.90.
2915.11–2915.35	A change to subheading 2915.11 through 2915.35 from any other subheading, including any subheading within the group.
2915.39	A change to subheading 2915.39 from any other subheading, except from subheading 3301.90.
2915.40–2915.90	A change to subheading 2915.40 through 2915.90 from any other subheading, including any subheading within the group.
2916.11–2916.20	A change to subheading 2916.11 through 2916.20 from any other subheading, including any subheading within the group.
2916.31–2916.39	A change to subheading 2916.31 through 2916.39 from any other subheading, including any subheading within the group, except from subheading 3301.90.
2917.11–2917.39	A change to subheading 2917.11 through 2917.39 from any other subheading, including any subheading within the group.
2918.11–2918.22	A change to subheading 2918.11 through 2918.22 from any other subheading, including any subheading within the group.
2923	A change to subheading 2918.23 from any other subheading, except from subheading 3301.90.
2918.29–2918.30	A change to subheading 2918.29 through 2918.30 from any other subheading, including any subheading within the group.
2918.90	A change to subheading 2918.90 from any other subheading, except from heading 3301.90.
2919	A change to subheading 2919 from any other heading.
2920.10–2926.90	A change to subheading 2920.10 through 2926.90 from any other subheading, including any subheading within the group.
2927–2928	A change to heading 2927 through 2928 from any other heading, including any heading within the group.
2929.10–2930.90	A change to subheading 2929.10 through 2930.90 from any other subheading, including any subheading within the group.
2931	A change to heading 2931 from any other heading.
2932.11–2932.90	A change to subheading 2932.11 through 2932.90 from any other subheading, including any subheading within the group, except from subheading 3301.90.
2933.11–2934.90	A change to subheading 2933.11 through 2934.90 from any other subheading, including any subheading within the group.
2935	A change to heading 2935 from any other heading.
2936.10–2936.29	A change to subheading 2936.10 through 2936.29 from any other subheading, including any subheading within the group.
2936.90	A change to subheading 2936.90 from any other subheading, except from subheading 2936.10 through 2936.29.

HTSUS	Tariff shift and/or other requirements
2937–2941	A change to heading 2937 through 2941 from any other heading, including any heading within the group.
2942	A change to heading 2942 from any other chapter.
3001.10	A change to subheading 3001.10 from any other subheading, except from subheading 0206.10 through 0208.90 or 0305.20, heading 0504 or 0510, or subheading 0511.99, unless the change from these provisions is to a powder of this subheading.
3001.20–3001.90	A change to subheading 3001.20 through 3001.90 from any other subheading, including any subheading with the group.
3002.10–3002.90	A change to subheading 3002.10 through 3002.90 from any other subheading, including any subheading within the group.
3003.10	A change to subheading 3003.10 from any other subheading, except from subheading 2941.10, 2941.20 or 3003.20.
3003.20	A change to subheading 3003.20 from any other subheading, except from subheading 2941.30 through 2941.90.
3003.31	A change to subheading 3003.31 from any other subheading, except from subheading 2937.91.
3003.39	A change to subheading 3003.39 from any other subheading, except from hormones or their derivatives classified in chapter 29.
3003.40	A change to subheading 3003.40 from any other subheading, except from heading 1211, subheading 1302.11, 1302.19, 1302.20, 1302.39, or from any alkaloids or their derivatives classified in chapter 29.
3003.90	A change to subheading 3003.90 from any other subheading, provided that the domestic content of the therapeutic or prophylactic component(s) is no less than 40 percent by weight of the total therapeutic or prophylactic content.
3004.10	A change to subheading 3004.10 from any other subheading, except from subheading 2941.10, 2941.20, 3003.10 or 3003.20.
3004.20	A change to subheading 3004.20 from any other subheading, except from subheading 2941.30 through 2941.90, or 3003.20.
3004.31	A change to subheading 3004.31 from any other subheading, except from subheading 2937.91, 3003.31 or 3003.39.
3004.32	A change to subheading 3004.32 from any other subheading, except from subheading 3003.39, or any adrenal cortical hormone/s classified in chapter 29.
3004.39	A change to subheading 3004.39 from any other subheading, except from subheading 3003.39, or any hormone/s or its/their derivative/s classified in chapter 29.
3004.40	A change to subheading 3004.40 from any other subheading, except from heading 1211, subheading 1302.11, 1302.19, 1302.20, 1302.39, 3003.40, or any alkaloid/s or its/their derivative/s provided for in chapter 29.
3004.50	A change to subheading 3004.50 from any other subheading, except from subheading 3003.90, or any vitamin/s classified in chapter 29, or products of heading 2936.
3004.9	A change to subheading 3004.90 from any other subheading, except from subheading 3003.90, provided that the domestic content of the therapeutic or prophylactic component/s is no less than 40 percent by weight of the total therapeutic or prophylactic content.
3005.10	A change to subheading 3005.10 from any other subheading.
3005.90	A change to subheading 3005.90 from any other subheading, except from Section XI, Harmonized System, unless the change is to a good of this subheading that is impregnated or coated with pharmaceutical substance/s.
3006.10	A change to subheading 3006.10 from any other subheading, except from subheading 1212.20 or 4206.10.
3006.20–3006.60	A change to subheading 3006.20 through 3006.60 from any other subheading, including any subheading within the group.
3101	A change to heading 3101 from any other heading, except from subheading 2301.20 or powders and meals of subheading 0506.90, heading 0508, or subheading 0511.91 or 0511.99.
3102.10–3102.21	A change to subheading 3102.10 through 3102.21 from any other subheading, including any subheading within the group.
(g)	**Section VII: Chapters 39 through 40**
3901–3915	A change to heading 3901 through 3915 from any other heading, including any heading within the group, provided that the domestic polymer content is no less than 40 percent by weight of the total polymer content.
3916.10–3918.90	A change to subheading 3916.10 through 3918.90 from any other subheading, including any subheading within the group.
3919.10–3919.90	A change to subheading 3919.10 through 3919.90 from any other subheading outside the group.
3920.10–3921.90	A change to subheading 3920.10 through 3921.90 from any other subheading including any subheading within the group.
3922–3926	A change to heading 3922 through 3926 from any other heading, including any heading within the group.
4001.10–4001.22	A change to subheading 4001.10 through 4001.22 from any other subheading, including any subheading within the group.
4001.29	A change to subheading 4001.29 from any other subheading, except from subheading 4001.21 or 4001.22.
4001.30	A change to subheading 4001.30 from any other subheading.
4002.11–4002.70	A change to subheading 4002.11 through 4002.70 from any other subheading, including any subheading within the group.
4002.80–4002.99	A change to subheading 4002.80 through 4002.99 from any other subheading, including any subheading within the group, provided that the domestic rubber content is no less than 40 percent by weight of the total rubber content.
4003–4004	A change to heading 4003 through 4004 from any other heading, including any heading within the group.
4005	A change to heading 4005 from any other heading, except from heading 4001 or 4002.
4006–4010	A change to heading 4006 through 4010 from any other heading, including any heading within the group.
4011.10–4012.90	A change to subheading 4011.10 through 4012.90 from any other subheading, including any subheading within the group.
4013	A change to heading 4013 from any other heading.
4014.10–4014.90	A change to subheading 4014.10 through 4014.90 from any other subheading, including any subheading within the group.
4015	A change to heading 4015 from any other heading.
4016.10–4016.99	A change to subheading 4016.10 through 4016.99 from any other subheading, including any subheading within the group.
4017	A change to heading 4017 from any other heading.

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(h)	**Section VIII: Chapters 41 through 43**
4104–4103	A change to heading 41.01 through 41.03 from any other chapter.
4104–4107	A change to heading 41.04 through 41.07 from any other heading, including another heading within that group; or A change to finished leather of heading 4104 through 4107 from wet blue hides or leather.
4108–4111	A change to heading 41.08 through 41.11 from any other heading, including another heading within that group.
4201	A change to heading 42.01 from any other heading.
4202.11	A change to subheading 4202.11 from any other heading.
4202.12–4202.22	A change to subheadings 4202.12 through 4202.22 from any other heading provided that the change does not result from the assembly of imported cut components.
4202.29	A change to subheading 4202.29 from any other heading.
4202.31–4202.32	A change to subheadings 4202.31 through 4202.32 from any other heading provided that the change does not result from the assembly of imported cut components.
4202.39	A change to subheading 4202.39 from any other heading.
4202.91–4202.99	A change to subheadings 4202.91 through 4202.99 from any other heading provided that the change does not result from the assembly of imported cut components.
4203–4206	A change to headings 42.03 through 42.06 from any other heading, including another heading within the group.
43.01	A change to heading 43.01 from any other chapter.
4302.11–4302.20	A change to subheading 4302.11 through 4302.20 from any other heading.
4302.30	A change to subheading 4302.30 from any other subheading provided that the change does not result from the assembly of imported cut fur components.
4303–4304	A change to headings 43.03 through 43.04 from any other heading, including another heading within that group.
(i)	**Section IX: Chapters 44 through 46**
4401–4411	A change to headings 44.01 through 44.11 from any other heading, including another heading within that group.
4412	A change to headings 4412 from any other heading; or A change to surface-covered plywood of 4412 from any other plywood that is not surface-covered, or is surface-covered only with a clear or transparent material which does not obscure the grain, texture, or markings of the face ply.
4413–4421	A change to headings 44.13 through 44.21 from any other heading, including another heading within that group.
4501	A change to heading 45.01 from any other heading.
4502	A change to heading 45.02 from any other heading except from heading 4501.
4503–4504	A change to headings 45.03 through 45.04 from any other heading, including another heading within that group.
4601	A change to subheading 4601.10 through 4601.99 from any other subheading, including another subheading within that group.
4602	A change to heading 46.02 from any other heading.
(j)	**Section X: Chapters 47 through 49**
4701–4702	A change to headings 47.01 through 47.02 from any other heading including a heading within that group.
4703.11–4704.29	A change to subheadings 4703.11 through 4704.29 from any other subheading, including another subheading within that group.
4705–4707	A change to headings 47.05 through 47.07 from any other heading, including another heading within that group.
4801–4807	A change to headings 48.01 through 48.07 from any other heading, including another heading within that group.
4808.10	A change to subheadings 4808.10 from any other heading.
4808.20–4808.30	A change to subheadings 4808.20 through 4808.30 from any other heading except from 4804.
4808.90	A change to subheading 4808.90 from any other chapter.
4809	A change to heading 48.09 from any other heading.
4810–4814	A change to headings 48.10 through 48.14 from any other heading, including another heading within that group.
4815	A change to heading 48.15 from any other heading.
4816	A change to heading 48.16 from any other heading, except from heading 48.09.
4817–4822	A change to headings 48.17 through 48.22 from any other heading, including another heading within that group.
4823.11	A change to 4823.11 from any other subheading.
4823.19	A change to 4823.19 from any other subheading.
4823.20–4823.59	A change to subheading 4823.20 through 4823.59 from any other chapter; or A change to 4823.20 through 4823.59 from within chapter 48 if that change is a result of a substantial transformation.
4823.60	A change to 4823.60 from any other subheading.
4823.70–4823.90	A change to subheading 4823.70 through 4823.90 from any other chapter; or A change to 4823.70 through 4823.90 from within chapter 48 if that change is a result of a substantial transformation.
4901–4911	A change to heading 49.01 through 49.11 from any other heading, including another heading within that group.

HTSUS	Tariff shift and/or other requirements
(k)	**SECTION XI: Chapters 50 through 63**

Notes: (1) For the purposes of Chapters 50 through 63, the following definitions will apply:

a. The term "greige", as used in chapters 50 through 55, 58, and 60, means that the fabric has not been subjected to any wet or dry finishing operations after it was formed.

b. The phrase "major parts", as used in chapters 61 and 62, means integral components of the garment, but does not include such parts as collars, cuffs, waistbands, plackets, pockets, linings, paddings, accessories, or the like.

c. The phrase "knit to shape", as used in chapters 61 and 62, refers to any made up major part (as defined above) of a garment which, prior to the fabric being cut, has the same shape, or closely resembles the shape, of that component as used in the garment.

d. The phrase "fully lined, fully padded, or fully insulated", as used in chapters 61 and 62, means that the body of the garment, together with its sleeves and/or legs, is entirely lined, padded, or insulated, but this does not include waistbands less than fifteen centimeters wide, cuffs less than ten centimeters wide, plackets, collars, shoulder straps, and the like).

e. The term "tailored", as used in chapters 61 and 62, refers to noncasual garments of the type normally worn for business or social purposes where some degree of formality is required, and garments of virtually identical construction. These garments have been permanently shaped and usually have trim, fitted lines obtained by careful cutting, seaming, and pressing.

(2) Where a tariff shift rule in chapters 61 or 62 involves the assembly of a garment, the rule is satisfied only when the entire assembly of all major parts occurs in one country.

(3) For the purposes of Section 102.11(b) of the General Rules, except for sets, where a good classifiable in Chapter 61 through 63 does not meet the tariff shift requirements of the heading or subheading under which it is classifiable, the country of origin of that good shall be the single country where the component which determines the classification of that good was cut or formed (e.g. knit to shape), provided all major parts were cut or formed in a single country.

5001–5003	A change to heading 5001 through 5003 from any other chapter.
5004–5006	A change to heading 5004 through 5006 from any heading outside that group.
5007	A change to heading 5007 from any other heading; or
	A change from greige fabric of heading 5007 to finished fabric of heading 5007 by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5101–5105	A change to heading 5101 through 5105 from any other chapter.
5106–5110	A change to heading 5106 through 5110 from any heading outside that group.
5111–5113	A change to heading 5111 through 5113 from any heading outside that group; or
	A change from greige fabric of headings 5111 through 5113 to finished fabric of those same headings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5201–5203	A change to heading 5201 through 5203 from any other chapter.
5204–5207	A change to heading 5204 through 5207 from any heading outside that group.
5208–5212	A change to heading 5208 through 5212 from any heading outside that group; or
	A change from greige fabric of heading 5208 through 5512 to finished fabric of those same headings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5301–5305	A change to heading 5301 through 5305 from any other chapter.
5306–5308	A change to heading 5306 through 5308 from any heading outside that group.
5309–5311	A change to heading 5309 through 5311 from any heading outside that group; or
	A change from greige fabric of heading 5309 through 5311 to finished fabric of those same headings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5401–5403	A change to heading 5401 through 5403 from any other chapter.
5404–5405	A change to heading 5404 through 5405 from any other chapter except from headings 3920 and 3921.
5406	A change to heading 5406 from any other chapter.
5407–5408	A change to heading 5407 through 5408 from any heading outside that group; or
	A change from greige fabric of heading 5111 through 5113 to finished fabric of those same headings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5501–5507	A change to heading 5501 through 5507 from any other heading except heading 5401 through 5405.
5508–5511	A change to heading 5508 through 5511 from any heading outside that group.
5512–5516	A change to heading 5512 through 5516 from any heading outside that group; or
	A change from greige fabric of heading 5512 through 5516 to finished fabric of those same headings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5601	A change to heading 5601 from any other heading.
5602–5605	A change to heading 5602 through 5605 from any heading outside that group.
5606	A change to heading 5606 from any other heading except from heading 5004 through 5006, 5106 through 5110, 5204 through 5207, 5306 through 5308, 5401 through 5406, and 5508 through 5511.
5607	(1) A change to twine, cordage, ropes, and cables, neither plaited or braided, nor covered or sheathed with rubber or plastics, of heading 5607, from any other heading except heading 5004 through 5006, 5106 through 5110, 5204 through 5207, 5306 through 5308, 5401 through 5406, and 5508 through 5511; or
	(2) A change to twine, cordage, ropes, and cables, either plaited or braided, or covered or sheathed with rubber or plastics, of heading 5607, from any other heading.
5608	A change to heading 5608 from any other heading except heading 5804.
5609	A change to heading 5609 from any other heading except from heading 5004 through 5007, 5106 through 5113, 5204 through 5212, 5306 through 5311, 5401 through 5408, 5508 through 5516, and 5607.
5701–5705	A change to heading 5701 through 5705 from any other chapter.
5801–5802	A change to heading 5801 through 5802 from any heading outside that group; or

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	A change from greige fabric of heading 5801 to 5802 to finished fabric of those same headings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5803	A change to heading 5803 from any other heading.
5804	A change to heading 5804 from any other heading; or
	A change from greige fabric of heading 5804 to finished fabric of that same heading by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5805	A change to heading 5805 from any other heading.
5806.10–5806.39	A change to subheading 5806.10 through 5806.39 from any heading except from heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, and 5512 through 5516; or
	A change from greige fabric of subheading 5806.10 to 5806.39 to finished fabric of those same subheadings by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, fulling, napping, decating, permanent stiffening, weighting, permanent embossing, or moireing.
5806.40	A change to subheading 5806.40 from any other heading.
5807	(1) For labels and similar articles, a change to heading 5807 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, and heading 5806.
	(2) For badges and similar articles, a change to heading 5807 from any other heading except subheading 6307.90.
5808.10	A change to subheading 5808.10 from any other heading.
5808.90	(1) For ornamental trimmings, a change to subheading 5808.90 from any other heading.
	(2) For tassels, pompons and similar articles, a change to subheading 5808.90 from any heading except from heading 5004 through 5006, 5106 through 5110, 5204 through 5207, 5306 through 5308, 5401 through 5406, and 5508 through 5511.
5809	A change to heading 5809 from any other heading.
5810	(1) Where the weight of the embroidery equals or exceeds the weight of the ground fabric, a change of the ground fabric to heading 5810 from any other heading; or
	(2) Where the weight of the embroidery is less than the weight of the ground fabric, a change of the ground fabric to heading 5810 from any other chapter except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602, 5603, 5608, 5903, 5907, 6001, and 6002.
5811	A change to heading 5811 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5601 through 5603, 5806, 5809 through 5810, 6002, and subheading 6307.90; or
	A change to heading 5811 from any other heading, provided that the outer fabric or fabrics are dyed and printed in the same country where the quilting is done.
5901–5902	A change to heading 5901 through 5902 from any other heading.
5903	A change to heading 5903 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5803, 5806.31 through 5806.39, 5808, and 6002; or
	(1) For woven fabric, a change to heading 5903 from any other heading, provided that the impregnation, coating, covering, or lamination accounts for at least 15 percent of the total weight of the fabric; or
	(2) For knit fabric, a change to heading 5903 from any other heading, provided that the impregnation, coating covering, or lamination accounts for at least 20 percent of the total weight of the fabric.
5904–5906	A change to heading 5904 through 5906 from any other heading.
5907	A change to heading 5907 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5803, 5806, 5808, and 6002; or
	(1) For woven fabric, a change to heading 5907 from any other heading, provided that the impregnation, coating, covering, or lamination accounts for at least 15 percent of the total weight of the fabric; or
	(2) For knit fabric, a change to heading 5907 from any other heading, provided that the impregnation, coating, covering, or lamination accounts for at least 20 percent of the total weight of the fabric.
5908–5910	A change to heading 5908 through 5910 from any other heading.
5911	A change to heading 5911 from any other heading except heading 5602 through 5603.
6001	A change to heading 6001 from any other heading; or
	A change from greige fabric of heading 6001 to finished fabric of that same heading by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, compacting, napping, shearing, or calendering; or
	A change to fabric of heading 6001 impregnated, coated, covered, or laminated with rubber, plastics, or other substances, from fabric of that same heading provided that the impregnation, coating, covering, or lamination accounts for at least 20 percent of the weight of the entire fabric.
6002	A change to heading 6002 from any heading outside that group; or
	A change from greige fabric of heading 6002 to finished fabric of heading 6002 by dyeing and printing, plus two or more of the following finishing operations—bleaching, shrinking, compacting, napping, shearing, or calendering.
6101	A change to heading 6101 from any other chapter; or
	A change to assembled garments of heading 6101, except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change from unassembled garment components classified in heading 6101 as a result of the application of GRI 2(a), except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, to assembled garments, provided that no major part has been knit to shape.
6102	A change to heading 6102 from any other chapter; or
	A change to assembled garments of heading 6102, except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change from unassembled garment components classified in heading 6102 as a result of the application of GRI 2(a), except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, to assembled garments, provided that no major part has been knit to shape.
6103	A change to heading 6103 from any other chapter; or

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6103.11–6103.19— .	A change to assembled garments of subheading 6103.11 through 6103.19 from subheading 6117.90; or
	A change to assembled garments from unassembled parts classified in subheading 6103.11 through 6103.19 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6103.21–6103.29— .	Each garment in an ensemble shall be treated separately and the marking rule applicable to each garment is the rule that would apply if the garment were separately entered;
6103.31–6103.39— .	A change to assembled garments of subheading 6103.31 through 6103.39 from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled garments from unassembled parts classified in subheading 6103.31 through 6103.39 as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6103.41–6103.49— .	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls or to fully lined tailored trousers, of subheading 6103.41 through 6103.49, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls, or to fully lined tailored trousers, from unassembled parts classified in subheading 6103.41 through 6103.49 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6104	A change to heading 6104 from any other chapter; or
6104.11–6104.19— .	A change to assembled garments of subheading 6104.11 through 6104.19 from subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled garments from unassembled parts classified in subheading 6104.11 through 6104.19 as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6104.21–6104.29— .	Each garment in an ensemble shall be treated separately and the marking rule applicable to each garment is the rule that would apply if the garment were separately entered;
6104.31–6104.39— .	A change to assembled garments of subheading 6104.31 through 6104.39 from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled garments from unassembled parts classified in subheading 6104.31 through 6104.39 as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6104.41–6104.49— .	A change to assembled tailored garments consisting of five or more major parts, of subheading 6104.41 through 6104.49, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled tailored garments consisting of five or more major parts from unassembled parts classified in subheading 6104.41 through 6104.49 as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6104.51–6104.59— .	A change to subheading 6104.51 through 6104.59 from any other chapter.
6104.61–6104.69— .	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls, or to fully lined tailored trousers, of subheading 6104.61 through 6104.69 from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls, or to fully lined tailored trousers, from unassembled parts classified in subheading 6104.61 through 6104.69 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6105	A change to heading 6105 from any other chapter; or
	A change to assembled tailored long sleeve shirts with collars, cuffs, full-front openings with plackets, and yokes, or to assembled fully lined, fully padded or fully insulated shirts, of heading 6105, from subheading either 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled tailored long sleeve shirts with collars, cuffs, full-front openings with plackets, and yokes, or to assembled fully lined, fully padded or fully insulated shirts from unassembled parts classified in heading 6105 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6106	A change to heading 6106 from any other chapter; or
	A change to assembled tailored long sleeve shirts, or shirt blouses, with collars, cuffs, full-front openings with plackets, and yokes, or to tailored long sleeve blouses without full front openings, with collars, cuffs, and yokes, or to assembled fully lined, fully padded, or fully insulated shirts, or heading 6106, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled tailored long sleeve shirts, or shirt blouses, with collars, cuffs, full-front openings with plackets, and yokes, or to tailored long sleeve blouses without full front openings, with collars, cuffs, and yokes, or to assembled fully lined, fully padded, or fully insulated shirts, from unassembled parts classified in heading 6106 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6107–6109	A change to heading 6107 through 6109 from any other chapter.
6110	A change to heading 6110 from any other chapter; or
	A change to assembled fully lined, fully padded, or fully insulated long sleeve garments of heading 6110, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated long sleeve garments from unassembled parts classified in heading 6110 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6111	A change to heading 6111 from any other chapter, except chapter 95; or
	A change to assembled fully lined, fully padded, or fully insulated outer garments of heading 6111 from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assemble fully lined, fully padded, or fully insulated outer garments from unassembled parts classified in heading 6111 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6112	A change to heading 6112 from any other chapter; or
6112.11–6112.20—	A change to assembled fully lined garments of subheading 6112.11 through 6112.20, from either subheading 6117.90 of subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined garments from unassembled parts classified in subheading 6112.11 through 6112.20 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6113	A change to heading 6113 from any other chapter; or
	A change to assembled fully lined, fully padded, or fully insulated garments of heading 6113, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or

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	A change to assembled fully lined, fully padded, or fully insulated garments from unassembled parts classified in heading 6113 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6114	A change to heading 6114 from any other chapter; or
	A change to assembled fully lined, fully padded, or fully insulated garments, consisting of five or more major parts, of heading 6114, from either subheading 6117.90 or subheading 6217.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated garments, consisting of five or more major parts, from unassembled parts classified in heading 6114 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6115–6117	A change to heading 6115 through 6117 from any other chapter.
6201	A change to heading 6201 from any other chapter, provided that no major part has been knit to shape; or
	A change to assembled garments of heading 6201, except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change from unassembled garment components classified in heading 6201 as a result of the application of GRI 2(a), except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, to assembled garments, provided that no major part has been knit to shape.
6202	A change to heading 6202 from any other chapter; or
	A change to assembled garments of heading 6202, except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change from unassembled garment components classified in heading 6202 as a result of the application of GRI 2(a), except (1) Anoraks, windbreakers, and similar articles, not fully lined, fully padded, or fully insulated, and (2) capes, cloaks, and similar articles, to assembled garments, provided that no major part has been knit to shape.
6203	A change to heading 6203 from any other chapter, provided that no major part has been knit to shape; or
6203.11–6203.19	A change to assembled garments of subheading 6203.11 through 6203.19 from subheading 6217.90; or
	A change to assembled garments from unassembled parts classified in subheading 6203.11 through 6203.19 as a result of the application of GRI 2(a);
6203.21–6203.29—	Each garment in an ensemble shall be treated separately and the marking rule applicable to each garment is the rule that would apply if the garment were separately entered;
6203.31–6203.39—	A change to assembled garments of subheading 6203.31 through 6203.39 from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled garments from unassembled parts classified in subheading 6203.31–6203.39 as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6203.41–6203.49—	A change to subheading 6203.41 through 6203.49 from any other chapter, provided that no major part has been knit to shape;
	A change to assembled fully lined, fully padded, or fulling insulated bib and brace overalls, or to fully lined tailored trousers, of subheading 6203.41 through 6203.49 from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls, or to fully lined tailored trousers, from unassembled parts classified in subheading 6203.41 through 6203.49 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6204	A change to heading 6204 from any other chapter, provided that no major part has been knit to shape; or
6204.11–6204.19—	A change to assembled garments of subheading 6204.11 through 6203.14 from subheading 6217.90; or
	A change to assembled garments from unassembled parts classified in subheading 6204.11 through 6204.19 as a result of the application of GRI 2(a);
6204.21–6204.29—	Each garment in an ensemble shall be treated separately and the marking rule applicable to each garment is the rule that would apply if the garment were separately entered;
6204.31–6204.39—	A change to assembled garments of subheading 6204.31 through 6204.39 from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled garments from unassembled parts classified in subheading 6204.31 through 6204.39, as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6204.41–6204.49—	A change to assembled tailored garments consisting of five or more major parts, of subheading 6204.41 through 6204.49, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled tailored garments consisting of five or more major parts, from unassembled parts classified in subheading 6204.41–6204.49 as a result of the application of GRI 2(a), provided that no major part has been knit to shape;
6204.51–6204.59—	A change to subheading 6204.51 through 6204.59 from any other chapter, provided that no major part has been knit to shape;
6204.61–6204.69—	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls, or to fully lined tailored trousers, of subheading 6204.61 through 6204.69, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated bib and brace overalls, or to fully lined tailored trousers, from unassembled parts classified in subheading 6204.61 through 6204.69 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6205	A change to heading 6205 from any other chapter, provided that no major part has been knit to shape; or
	A change to assembled tailored long sleeve shirts with collars, cuffs, full-front openings with plackets, and shoulder yokes, or to assembled fully lined, fully padded, or fully insulted shirts, of heading 6205, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled tailored long sleeve shirts with collars, cuffs, full-front openings with plackets, and shoulder yokes, or to assembled fully lined, fully padded, or fully insulated shirts from unassembled parts classified in heading 6205 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6206	A change to heading 62.06 from any other chapter, provided that no major part has been knit to shape; or

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	A change to assembled tailored long sleeve shirts with collars, cuffs, full-front openings with plackets, and yokes, or to assembled tailored long sleeve blouses without full front openings, with collars, cuffs, and yokes, or to assembled fully lined, fully padded, fully insulated shirts of heading 6206, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled tailored long sleeve shirts with collars, cuffs, full-front openings with plackets, and yokes, or to assembled tailored long sleeve blouses without full-front openings, with collars, cuffs, and yokes, or to assembled fully lined, fully padded, fully insulated shirts, from unassembled parts classified in heading 6206 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6207–6208	A change to heading 6207 through 6208 from any other chapter, provided that no major part has been knit to shape.
6209	A change to heading 6209 from any other chapter except from chapter 95, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated outer garments of heading 6209, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated outer garments from unassembled parts classified in heading 6209 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6210	A change to heading 6210 from any other chapter, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated long sleeve garments of heading 6210, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated long sleeve garments, from unassembled parts classified in heading 6210 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6211	A change to heading 6211 from any other chapter, provided that no major part has been knit to shape; or
6211.20—	A change to assembled garments of subheading 6211.20 from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled garments from unassembled parts classified in subheading 6211.20 as a result of the application of GRI 2(a), provided that no major part has been knit to shape; or
6211.31–6211.49—	A change to assembled fully lined, fully padded, or fully insulated garments consisting of five or more major parts, of subheading 6211.31 through 6211.49, from either subheading 6217.90 or subheading 6117.90, provided that no major part has been knit to shape; or
	A change to assembled fully lined, fully padded, or fully insulated garments consisting of five or more major parts, from unassembled parts classified in subheading 6211.20 as a result of the application of GRI 2(a), provided that no major part has been knit to shape.
6212	A change to heading 6212 from any other chapter, provided that no major part has been knit to shape.
6213–6214	A change to heading 6213 through 6214 from any other chapter except from heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5806, 5808 through 5811, 5901, 5903, and 5906 through 5907, provided that no major part has been knit to shape.
6215–6217	A change to heading 6215 through 6217 from any other chapter.
6301.10	A change to subheading 6301.10 from any other heading.
6301.20–6301.90	A change to subheading 6301.20 through 6301.90 from any other heading except from heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5802, 5809 through 5811, 5903, 5907, and 6001 through 6002.
6302	(1) Except for quilted goods provided for in (2) below, a change to heading 6302 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5804, 5806, 5809 through 5810, 5901, 5903, 5906 through 5907, and 6001 through 6002;
	(2) For quilted goods, either (a) A change to heading 6302 from any other heading except subheading 6307.90, provided that both the cutting of the top and bottom fabrics, and the entire assembly of the quilted goods, are done in one country; or (b) If (a) is not satisfied, then the country of origin shall be the country which produced the fabric, or fabrics, which impart the essential character to the goods.
6303	(1) For quilted goods, a change to heading 6303 from any other heading except subheading 6307.90, provided that both the cutting of the top and bottom fabrics, and the entire assembly of the quilted goods, are done in one country. If this rule is not satisfied, then the country of origin shall be the country which produced the fabric, or fabrics, which impart the essential character to the goods; or
	(2) For curtains, drapes, or valances, except for goods provided for in (1) Above, a change to heading 6303 from any other heading, provided that the change is the result of at least cutting on all sides, hemming the cut edges, and a significant sewing or assembly operation.
	(3) For goods not meeting paragraphs (1) or (2) above, and all other goods, a change to heading 6303 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5804, 5806, 5809 through 5810, 5901, 5903, 5906 through 5907, and 6001 through 6002.
6304	(1) Except for quilted goods, pillow covers, and pillow shams provided for in (2) and (3) below, a change to heading 6304 from any other heading except heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5804, 5806, 5809 through 5810, 5901, 5903 through 5904, 5906 through 5907, and 6001 through 6002;
	(2) For quilted goods, a change to heading 6304 from any other heading except subheading 6307.90, provided that both the cutting of the top and bottom fabrics, and the entire assembly of the quilted goods, are done in one country. If this rule is not satisfied, then the country of origin shall be the country which produced the fabric, or fabrics, which impart the essential character to the goods;
	(3) For pillow covers and pillow shams, a change to heading 6304 from any other heading.
6305	A change to heading 6305 from any other heading except from heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5802, 5809 through 5811, 5903, 5907, and 6001 through 6002.
6306.11–6306.19	For tarpaulins and sunblinds, a change to subheading 6306.11 through 6306.19 from any other heading except from heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 56.03, 5801 through 5802, 5809 through 5811, 5903, 5906 through 5907, and 6001 through 6002.
	(2) For awnings, a change to subheading 6306.11 through 6306.19 from any other chapter.

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6306.21–6306.49	A change to subheading 6306.21 through 6306.49 from any other chapter.
6306.91–6306.99	A change to subheading 6306.91 through 6306.99 from any other heading, except subheading 6307.90, provided that the change is the result of more than cutting and hemming processes.
6307.10	A change to subheading 6307.10 from any heading except from heading 5007, 5111 through 5113, 5208 through 5212, 5309 through 5311, 5407 through 5408, 5512 through 5516, 5602 through 5603, 5801 through 5804, 5806, 5809 through 5811, 5903, 5907, and 6001 through 6002.
6307.20	A change to subheading 6307.20 from any other heading.
6307.90	A change to subheading 6307.90 from any other heading provided that the change is the result of at least cutting and a significant sewing or assembly operation.
6308	The country of origin of each article in the set which merits consideration in the determination of the essential character of the set.
6309	The country where the goods were last collected and packaged for shipment.
6310	For worn out articles, the country where the goods were last collected and packaged for shipment; For all other goods, a change to heading 6310 from any other heading.
(l)	**Section XII: Chapters 64 through 67**

Chapter 64: Note: For purposes of this chapter, the term "formed uppers" means uppers, with closed bottoms, which have been shaped by lasting, molding or otherwise but not by simply closing at the bottom.

6401–6405	A change to heading 6401 through 6405 from any tariff item outside that group, except from formed uppers
6406.10.	A change to 6406.10 from any other subheading.
6406.20–6406.99	A change to subheadings 6406.20 through 6406.99 from any other chapter.
6501–6502	A change to headings 6501–6502 from any other heading outside that group.
6503–6506	A change to headings 6503–6506 from any other heading outside that group, except headings 6501 through 6502; or A change to headings 6503–6506 from heading 6501 by means of a blocking process; or A change to headings 6503–6506 from heading 6502, provided that the change is the result of at least three processing steps (e.g. dyeing, blocking, trimming, or adding a sweatband).
6507	A change to heading 6507 from any other heading.
6601	A change to heading 6601 from any other heading.
6602	A change to heading 6602 from any other heading.
6603.10	A change to heading 6603.10 from any other heading.
6603.20	A change to heading 6603.20 from any other heading; or A change from 6603.90 except when that change is pursuant to GRI 2(a).
6603.90	A change to heading 6603.90 from any other heading.
6701	A change to heading 6701 from any other heading; or A change to articles of feather or down of heading 6701 from feathers or down.
6702–6704	A change to heading 6702–6704 from any other heading, including another heading within that group.
(m)	**Section XIII: Chapters 68 through 70**
6801–6811	A change to heading 6801 through 6809 from any other heading, including another heading within that group.
6809.11 .	A change to subheading 6809.11 from any other heading.
6809.19 .	A change to subheading 6809.19 from any other heading.
6809.90	A change to subheading 6809.90 from any other subheading.
6810.11	A change to subheading 6810.11 from any other heading.
6810.19	A change to subheading 6810.19 from any other heading.
6810.91	A change to subheading 6819.91 from any other subheading.
6810.99	A change to subheading 6810.99 from any other heading.
6811.10	A change to subheading 6811.10 from any other heading.
6811.20	A change to subheading 6811.20 from any other heading.
6811.30	A change to subheading 6811.30 from any other heading.
6811.90	A change to subheading 6811.90 from any other heading; or A change to 6811.90 from any other subheading, if that change results in a substantial transformation.
6812.10	A change to subheading 6812.10 from any other heading.
6812.20	A change to subheading 6812.20 from any other subheading.
6812.30	A change to subheading 6812.30 from any other subheading, except subheading 6812.20.
6812.40	A change to subheading 6812.40 from any other subheading.
6812.50	A change to subheading 6812.50 from any other subheading.
6812.60–6812.70	A change to subheading 6812.60 through 6812.70 from any subheading outside that group.
6812.90	A change to subheading 6812.90 from any other heading; or A change to 6812.90 from within 6812 if that change results in a substantial transformation.
6813	A change to heading 6813 from any other heading.
6814.10	A change to subheading 6814.10 from any other heading.
6814.90	A change to subheading 6814.90 from any other heading; or A change to 6814.90 from 6814.10 if that change results in a substantial transformation.
6815	A change to subheading 6815.10 through 6815.99 from any other subheading, including within that group.
6901–6914	A change to heading 6901 through 6914 from any other chapter.
7001	A change to heading 7001 from any other heading.
7002	A change to heading 7002 from any other heading.
7003–7006	A change to heading 7003 through 7006 from any heading outside that group.
7007	A change to heading 7007 from any other heading.
7008	A change to heading 7008 from any other heading.
7009.10	A change to heading 7009.10 from any other subheading.

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7009.91–7009.92	A change to heading 7009.91 through 7009.92 from any other heading.
7010–7018	A change to heading 7010 through 7018 from any other heading, except from heading 7020; or A change to heading 7010 through 7018 from heading 7020 if that change results in a substantial transformation.
7019.10	A change to heading 7019.10 from any other heading.
7019.20	A change to heading 7019.20 from any other subheading.
7019.31–7019.32	A change to heading 7019.31 through 7019.32 from any other subheading outside that group.
7019.39	A change to heading 7019.39 from any other subheading.
7019.90	A change to heading 7019.90 from any other heading; or A change to heading 7019.90 from within 7019 if that change results in a substantial transformation.
7020	A change to heading 7020 from any other heading, except from heading 7010 through 7018: or A change to heading 7020 from heading 7010 through 7018 if that change results in a substantial transformation.
(n)	**Section XIV: Chapter 71**
7101	A change to heading 7101 from any other heading, except heading 0307.
7102–7103	A change to heading 7102 through 7103 from any other chapter.
7104–7105	A change to heading 7104 through 7105 from any other heading, including another heading within that group.
7106	A change to heading 7106 from any other chapter.
7107	A change to heading 7107 from any other chapter, except from chapter 72 through 76, or chapter 78 through 83.
7108	A change to heading 7108 from any other chapter.
7109	A change to heading 7109 from any other chapter, except from chapter 72 through 76, or chapter 78 through 83.
7110	A change to heading 7110 from any other chapter.
7111	A change to heading 7111 from any other chapter, except from chapter 72 through 76, or chapter 78 through 83.
7112	A change to heading 7112 from any other heading.
7113–7115	A change to subheading of heading 7113 through 7115 from any other subheading, including to a subheading within that group.
7116	A change to heading 7116 from any other heading, except that pearls, temporarily or permanently strung but without the addition of clasps or other ornamental features of precious metals or stones, shall have the origin of the pearls.
7117–7118	A change to heading 7117–7118 from any other heading, including a heading within that group.
(o)	**Section XV: Chapters 72 through 83**
72.01–72.06	A change to heading 72.01 through 72.06 from any other heading, including another heading within that group.
72.07	A change to heading 72.07 from any other heading except 7206.
72.08	A change to heading 72.08 from any other heading.
72.09	A change to heading 72.09 from any other heading except 7208 or 7211.
72.10	A change to heading 72.10 from any other heading except 7208–7212.
72.11	A change to heading 72.11 from any other heading except 7208–7209.
72.12	A change to heading 72.12 from any other heading except 7208–7211.
72.13	A change to heading 72.13 from any other heading.
72.14	A change to heading 72.14 from any other heading except from heading 72.13.
72.15	A change to heading 72.15 from any other heading, except from heading 72.13 through 72.14.
72.16	A change to heading 72.16 from any other heading, except from heading 72.08 through 72.15.
72.17	A change to heading 72.17 from any other heading, except from heading 72.13 through 72.15.
72.18	A change to heading 72.18 from any other heading.
72.19–72.20	A change to heading 72.19 through 72.20 from any other heading outside that group.
72.21–72.22	A change to heading 72.21 through 72.22 from any other heading outside that group.
72.23	A change to heading 72.23 from any other heading, except from heading 72.21 through 72.22.
72.24	A change to heading 72.24 from any other heading.
72.25–72.26	A change to heading 72.25 through 72.26 from any other heading outside that group.
72.27–72.28	A change to heading 72.27 through 72.28 from any other heading outside that group.
72.29	A change to heading 72.29 from any other heading, US: except from heading 72.27 through 72.28.
73.01–73.07	A change to heading 73.01 through 73.07 from any other heading, including within that group.
73.08	A change to heading 73.08 from any other heading, except for changes resulting from the following processes performed on angles, shapes, or sections of heading 72.16: (a) drilling, punching, notching, cutting, cambering, or sweeping, whether performed individually or in combination: (b) adding attachments or weldments for composite construction; (c) adding attachments for handling purposes; (d) adding weldments, connectors or attachments to H-sections or I-sections; provided that the maximum dimension of the weldments, connectors, or attachments is not greater than the dimension between the inner surfaces of the flanges of the H-sections or I-sections. (e) painting, galvanizing, or otherwise coating; or (f) adding a simple base plate without stiffening elements, individually or in combination with drilling, punching, notching, or cutting, to create an article suitable as a column.
73.09–73.14	A change to heading, 73.12 through 73.14 from any other heading, including another heading within that group.
7315.11–7315.12	A change to subheading 7415.11 through 7315.12 from any other heading; or A change to subheading 7315.11 through 7315.12 from subheading 7315.19 or 7315.90 except when that change is pursuant to General Rule of Interpretation 2(a).
7315.19	A change to subheading 7315.19 from any other subheading.
7315.20–7315.89	A change to subheading 7315.20 through 7315.89 from any other heading; or A change to subheading 7315.20 through 7315.89 from subheading 7315.90 except when that change is pursuant to General Rule of Interpretation 2(a).
7315.90	A change to subheading 7315.90 from any other subheading.
73.16	A change to heading 73.16 from any other heading, except from heading 73.12 or 73.15.

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73.17–73.18	A change to heading 73.17 through 73.18 from any other heading, including another heading within that group.
73.19	A change to heading 73.19 from any other heading.
73.20	A change to heading 73.20 from any other heading.
7321.11–7321.83	A change to subheading 7321.11 through 7321.83 from any other heading; or A change to subheading 7321.11 through 7321.83 from heading 7321.90 except when classified pursuant to General Rule of Interpretation 2(a).
7321.90	A change to subheading 7321.90 from any other heading.
73.22–73.23	A change to heading 73.22 through 73.23 from any other heading, including another heading within that group.
7324.10–7324.29	A change to subheading 7324.10 through 7324.29 from any other subheading, including another subheading within that group.
7324.90	A change to subheading 7324.90 from any other subheading.
73.25–73.26	A change to heading 73.25 through 73.26 from any other heading, including another heading within that group.
74.01–74.07	A change to heading 74.01 through 74.07 from any other heading, including another heading within that group.
7408	A change to heading 7408 from any other heading US: except from heading 74.07.
74.09	A change to heading 74.09 from any other heading.
74.10	A change to heading 74.10 from any other heading, except from plate, sheet or strip of heading 7409 of a thickness less than 5mm.
74.11–74.18	A change to heading 74.11 through 74.18 from any other heading, including another heading within that group.
7419.10–7419.99	A change to subheading 7419.10–7419.99 from any other subheading, including another subheading within that group.
75.01	A change to heading 75.01 from any other heading.
7502	A change to subheading 7502 from any other heading.
75.03	A change to heading 75.03 from any other heading.
75.04	A change to heading 75.04 from any other heading.
7505.11–7505.22	A change to heading 75.05 from any other heading subheading, including another subheading within that group.
75.06	A change to heading 75.06 from any other heading; or A change to foil, not exceeding 0.15mm in thickness from any other good of heading 7506, provided that there has been a reduction in thickness of no less than 50 percent.
7507.11–7508.00	A change to subheading 7507.11–7508.00 from any other subheading, including another subheading within that group.
76.01–76.04	A change to heading 76.01 through 76.04 from any other heading, including another heading within that group.
76.05	A change to heading 76.05 from any other heading, except from heading 76.04.
76.06–76.15	A change to heading 76.06 through 76.15 from any other heading, including another heading within that group.
7616.10–7616.90	A change to subheading 7616.10–7616.90 from any other subheading, including another subheading within that group.
78.01–78.03	A change to heading 78.01 through 78.03 from any other heading, including another heading within that group.
7804.11–7804.20	A change to subheading 7804.11–7804.20 from any other subheading, including another subheading within that group; or A change to any of the following goods of this heading, including from materials also classified under this heading; powder except from flakes; flakes except from powder; plates except from sheets or strip; sheets except from plate or strip; strip except from sheets or plate.
78.05–78.06	A change to heading 78.05 through 78.06 from any other heading, including another heading within that group; or A change to any of the following goods of this heading, including from materials also classified under this heading: tubes except from pipes; pipes except from tubes; tube or pipe fittings except from tubes or pipes; cables/stranded wire/plaited bands.
79.01–79.06	A change to heading 79.01 through 79.06 from any other heading, including another heading within that group; or A change to any of the following goods of this heading, including from materials also classified under this heading; matte; unwrought; powder except from flakes; flakes except from powder; bars except from rods or profiles; rods except from bars or profiles; profiles except from rods or bars; wire except from rod; plates except from sheets or strip; sheets except from plate or strip; strip except from sheets or plate; foil; except from sheet or strip, tubes except from pipes; pipes except from tubes; tube or pipe fittings except from tubes or pipes;
7907.10–7907.90	A change to subheading 7907.10–7907.90 from any other subheading, including another subheading within that group.
8001	A change to heading 8001 from any other heading.
80.02–80.04	A change to heading 80.02 through 80.04 from any other heading, including another heading within that group; or A change to any of the following goods of this heading, including from materials also classified under this heading: bars except from rods or profiles; rods except from bars or profiles; profiles except from rods or bars; wire except from rod, plates except from sheets or strip; sheets except from plate or strip; strip except from sheets or plate.
8005.10–8005.20	A change to subheading 8005.10–8005.20 from any other subheading, including another subheading within that group.
80.06–80.07	A change to heading 80.06 through 80.07 from any other heading, including another heading within that group; or A change to any of the following goods of this heading, including from materials also classified under this heading: tubes except from pipes; pipes except from tubes; tube or pipe fittings except from tubes or pipes; cables/stranded wire/plaited bands.

Chapter 81 Note: Waste and scrap are products of the country in which they are collected.

8101.10–8101.92	A change to subheading 8101.10 through 8101.92 from any other subheading, including another subheading within that group; or A change to any of the following goods of this heading, including from materials also classified under this heading: matte; unwrought; bars except from rods or profiles; rods except from bars or rofiles; profiles except from rods or bars; plates except from sheets or strip; sheets except from plate or strip; strip except from sheets or plate; foil except from sheet and strip.
8 01.93	A change to subheading 8101.93 from any other subheading, except subheading 8101.92.
8101.99	A change to subheading 8101.99 from any other subheading; or A change to any of the following goods of this heading, including from materials also classified under this heading: tubes except from pipes; pipes except from tubes; tube or pipe fittings except from tubes or pipes; cables/stranded wire/plaited bands.
8 02.10–8102.92	A change to subheading 8102.10 through 8102.92 from any other subheading, including another subheading within that group; or

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	A change to any of the following goods of this heading, including from materials also classified under this heading: matte; unwrought; bars except from rods or profiles; rods except from bars or profiles; profiles except from rods or bars; plates except from sheets or strip; sheets except from plate or strip; strip except from sheets or plate; foil except from sheet and strip.
8102.93	A change to subheading 8102.93 from any other subheading, except from subheading 8102.92.
8102.99	A change to subheading 8102.99 from any other subheading.
8103.10–8113.00	A change to subheading 8103.10–8113.00 from any other subheading, including another subheading within that group; or
	A change to any of the following goods of this heading, including from materials also classified under this heading: matte; Unwrought; powder except from flakes; flakes except from powder; bars except from rods or profiles; rods except from bars or profiles; profiles except from rods or bars; wire except from rod; plates except from sheets or strip; sheets except from plate or strip; strip except from sheets or plate; foil except from sheet or strip; tubes except from pipes; pipes except from tubes; tube or pipe fittings except from tubes or pipes; cables/stranded wire/plaited bands.
8201.10–8202.40	A change to subheading 8201.10–8202.40 from any other subheading, including another subheading within that group.
8202.91	A change to subheading 8202.91 from any other subheading, except subheading 8202.99.
8202.99	A change to subheading 8202.99 from any other heading.
8203.10–8207.90	A change to subheading 8203.10–8207.90 from any other subheading, including another subheading within that group.
82.08–82.15	A change to heading 82.08 through 82.15 from any other heading, including another heading within that group.
8301.10–8301.50	A change to subheading 8301.10 through 8301.40 from any other subheading, including within that group, except a change from subheading 8301.60 when that change is pursuant to GRI 2(a).
8301.60–8301.70	A change to subheading 8301.60 through 8301.70 from any other chapter.
8302.10–8302.60	A change to subheading 8302.10 through 8302.60 from any other subheading, including another subheading within that group.
83.03–83.04	A change to heading 83.03 through 83.04 from any other heading, including another heading within that group.
8305.10–8305.90	A change to subheading 8305.10 through 8305.90 from any other subheading, including another subheading within that group.
83.06–83.07	A change to heading 83.06 through 83.07 from any other heading, including another heading within that group.
8308.10–8308.90	A change to subheading 8308.10 through 8308.90 from any other subheading, including another subheading within that group.
83.09–83.10	A change to heading 83.09 through 83.10 from any other heading, including another heading within that group.
8311.10–8311.90	A change to subheading 8311.10 through 8311.90 from any other subheading, including another subheading within that group.
(p)	**Section XVI: Chapters 84 through 85**

Note: Tariff changes within Chapters 84 and 85 which occur only as a result of the application of General Rule of Interpretation 2(a) of the HTS shall not be sufficient to confer origin.

8401.10	A change to subheading 8401.10 from any other subheading.
8401.20	A change to subheading 8401.20 from any other subheading or from parts provided for in 8401.20.
8401.30	A change to subheading 8401.30 from any other subheading.
8401.40	A change to subheading 8401.40 from any other heading.
8402.11–8402.12	A change to subheading 8402.11 through 8402.12 from any other subheading outside that group.
8402.19–8402.20	A change to 8402.19 through 8402.20 from any other subheading, including a subheading within that group.
8402.90	A change to subheading 8402.90 from any other heading, except headings 7303, 7304, 7305 or 7306, unless the change from these headings involve bending to shape.
8403.10	A change to subheading 8403.10 from any other subheading.
8403.90	A change to subheading 8403.90 from any other heading.
8404.10–8404.20	A change to subheading 8404.10 through 8404.20 from any other subheading, including another subheading within that group.
8404.90	A change to subheading 8404.90 from any other heading.
8405.10	A change to subheading 8405.10 from any other subheading.
8405.90	A change to subheading 8405.90 from any other heading.
8406.11–8406.19	A change to subheading 8406.11 through 8406.19 from any other subheading, including another subheading within that group.
8406.90	A change to subheading 8406.90 from any other heading.
84.07	A change to heading 84.07 from any other heading.
84.08	A change to heading 84.08 from any other heading.
8409.10	A change to subheading 8409.10 from any other heading.
8409.91–8409.99	A change to subheading 8409.91 through 8409.99 from any other heading, except a change resulting from a simple assembly.
8410.11–8410.13	A change to subheading 8410.11 through 8410.13 from any other subheading outside that group.
8410.90	A change to subheading 8410.90 from any other heading.
8411.11–8411.82	A change to subheading 8411.11 through 8411.82 from any other subheading outside that group.
8411.91–8411.99	A change to subheading 8411.91 through 8411.99 from any other heading.
8412.10–8412.80	A change to subheading 8412.10 through 8412.80 from any other subheading, including another subheading within that group.
8412.90	A change to subheading 8412.90 from any other heading.
8413.11–8413.82	A change to subheading 8413.11 through 8413.82 from any other subheading, including another subheading within that group.
8413.91	A change to subheading 8413.91 from any other heading.
8413.92	A change to subheading 8413.92 from any other heading.
8414.10–8414.80	A change to subheading 8414.10 through 8414.80 from any other subheading, including another subheading within that group.
8414.90	A change to subheading 8414.90 from any other heading.

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8415.10–8415.83	A change to subheading 8415.10 through 8415.83 from any other subheading, except a change within that group resulting from a simple assembly.
8415.90	A change to subheading 8415.90 from any other heading, except a change resulting from a simple assembly.
8416.10–8416.30	A change to subheading 8416.10 through 8416.30 from any other subheading, including another subheading within that group.
8416.90	A change to subheading 8416.90 from any other heading.
8417.10–8417.80	A change to subheading 8417.10 through 8417.80 from any other subheading, including another subheading within that group.
8417.90	A change to subheading 8417.90 from any other heading.
8418.10–8418.91	A change to subheading 8418.10 through 8418.91 from any other subheading, including another subheading within that group.
8418.99	A change to subheading 8418.99 from any other heading, except headings 7303, 7304, 7305 or 7306, unless the change from these headings involves bending to shape.
8419.11–8419.89	A change to subheading 8419.11 through 8419.89 from any other subheading, including another subheading within that group.
8419.90	A change to subheading 8419.90 from any other heading, except headings 7303, 7304, 7305, or 7306, unless the change from these headings involves bending to shape, and except a change from headings 8404 or 8501, when resulting from a simple assembly.
8420.10	A change to subheading 8420.10 from any other subheading.
8420.91	A change to subheading 8420.91 from any other heading.
8420.99	A change to subheading 8420.99 from any other heading, except heading 8501 when resulting from a simple assembly.
8421.11–8421.39	A change to subheading 8421.11 through 8421.39 from any other subheading, including another subheading within that group.
8421.91	A change to subheading 8421.91 from any other heading.
8421.99	A change to subheading 8421.99 from any other heading.
8422.11–8422.40	A change to subheading 8422.11 through 8422.40 from any other subheading, including another subheading within that group.
8422.90	A change to subheading 8422.90 from any other heading, except heading 8501.
8423.10–8423.89	A change to subheading 8423.10 through 8423.89 from any other subheading, including another subheading within that group.
8423.90	A change to subheading 8423.90 from any other heading.
8424.10–8424.89	A change to subheading 8424.10 through 8424.89 from any other subheading, including another subheading within that group.
8424.90	A change to subheading 8424.90 from any other heading, except subheadings 8414.40 or 8414.80
8425.11–8430.69	A change to subheading 8425.11 through 8430.69 from any other subheading, including another subheading within that group.
84.31	A change to heading 84.31 from any other heading, except heading 8501 when resulting from a simple assembly.
8432.10–8432.80	A change to subheading 8432.10 through 8432.80 from any other subheading, including another subheading within that group.
8432.90	A change to subheading 8432.90 from any other heading.
8433.11–8433.60	A change to subheading 8433.11 through 8433.60 from any other subheading, including another subheading within that group.
8433.90	A change to subheading 8433.90 from any other heading, except headings 8407 or 8408 when resulting from a simple assembly.
8434.10–8434.20	A change to subheading 8434.10 through 8434.20 from any other subheading, including another subheading within that group.
8434.90	A change to subheading 8434.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8435.10	A change to subheading 8435.10 from any other subheading.
8435.90	A change to subheading 8435.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8436.10–8436.80	A change to subheading 8436.10 through 8436.80 from any other subheading, including another subheading within that group.
8436.91	A change to subheading 8436.91 from any other heading.
8436.99	A change to subheading 8436.99 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly.
8437.10–8437.80	A change to subheading 8437.10 through 8437.80 from any other subheading, including another subheading within that group.
8437.90	A change to subheading 8437.90 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly
8438.10–8438.80	A change to subheading 8438.10 through 8438.80 from any other subheading, including another subheading within that group.
8438.90	A change to subheading 8438.90 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly
8439.10–8439.30	A change to subheading 8439.10 through 8439.30 from any other subheading, including another subheading within that group.
8439.91	A change to subheading 8439.91 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly.
8439.99	A change to subheading 8439.99 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly.
8440.10	A change to subheading 8440.10 from any other subheading.
8440.90	A change to subheading 8440.90 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly.
8441.10–8441.80	A change to subheading 8441.10 through 8441.80 from any other subheading, including another subheading within that group.

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8441.90	A change to subheading 8441.90 from any other heading, except for headings 8407, 8408 or 8501 when resulting from a simple assembly.
8442.10–8442.30	A change to subheading 8442.10 through 8442.30 from any other subheading outside that group.
8442.40	A change to subheading 8442.40 from any other heading, except for heading or 8501 when resulting from a simple assembly.
8442.50	A change to subheading 8442.50 from any other heading.
8443.11–8443.60	A change to subheading 8443.11 through 8443.60 from any other subheading outside that group.
8443.90	A change to subheading 8443.90 from any other heading, except for heading 8501 when resulting from a simple assembly.
84.44	A change to heading 84.44 from any other heading.
8445.11–8447.90	A change to subheading 8445.11 through 8447.90 from any other subheading outside that group.
8448.11–8448.19	A change to subheading 8448.11 through 8448.19 from any other subheading, except a change resulting from a simple assembly.
8448.19	A change to subheading 8448.19 from any other subheading, except a change resulting from a simple assembly.
8448.20–8448.59	A change to subheading 8448.20 through 8448.59 from any other heading, except for heading 8501.
84.49	A change to subheading 84.49 from any other heading.
8450.11–8450.20	A change to subheading 8450.11 through 8450.20 from any other subheading, including another subheading within that group.
8450.90	A change to subheading 8450.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8451.10–8451.80	A change to subheading 8451.10 through 8451.80 from any other subheading, including another subheading within that group.
8451.90	A change to subheading 8451.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8452.10–8452.29	A change to subheading 8452.10 through 8452.29 from any other subheading outside that group.
8452.30–8452.40	A change to subheading 8452.30–8452.40 from any other subheading, including another subheading within that group.
8452.90	A change to subheading 8452.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8453.10–8453.80	A change to subheading 8453.10 through 8453.80 from any other subheading, including another subheading within that group.
8453.90	A change to subheading 8453.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8454.10–8454.30	A change to subheading 8454.10 through 8454.30 from any other subheading, including another subheading within that group.
8454.90	A change to subheading 8454.90 from any other heading.
8455.10–8455.22	A change to subheading 8455.10 through 8455.22 from any other subheading, including another subheading within that group.
8455.30	A change to subheading 8455.30 from any other heading.
8455.90	A change to subheading 8455.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8456.10–8456.90	A change to subheading 8456.10 through 8456.90 from any other heading.
8457.10	A change to subheading 8457.10 from any other heading except from headings 84.58 through 8465 when resulting from a simple assembly.
8457.20–8465.99	A change to subheading 8457.20 through 8465.99 from any other heading, including another heading within that group.
8466.10–8466.94	A change to subheading 8466.10 through 8466.94 from any other heading outside that group, except heading 8501 when resulting from a simple assembly.
8467.11–8467.89	A change to subheading 8467.11 through 8467.89 from any other subheading, including another subheading within that group.
8467.91–8467.99	A change to subheading 8467.91 through 8467.99 from any other heading, except heading 8407.
8468.10–8468.80	A change to subheading 8468.10 through 8468.80 from any other subheading, including another subheading within that group.
8468.90	A change to subheading 8468.90 from any other heading.
8469.10–8469.39	A change to subheading 8469.10 through 8469.39 from any subheading outside that group.
8470.10–8471.91	A change to subheading 8470.10 through 8471.91 from any other subheading, except when resulting from a simple assembly.
8471.92–8472.90	A change to subheading 8471.92 through 8472.90 from any other subheading, except when resulting from a simple assembly.
8473	A change to heading 8473 from any other heading, except heading 8501.
8474.10–8474.80	A change to subheading 8474.10 through 8474.80 from any other subheading, except when resulting from a simple assembly.
8474.90	A change to subheading 8474.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8475.10–8475.20	A change to subheading 8475.10 through 8475.20 from any other subheading, including another subheading within that group.
8475.90	A change to subheading 8475.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8476.11–8476.19	A change to subheading 8476.11 through 8476.19 from any other subheading outside that group.
8476.90	A change to subheading 8476.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8477.10–8477.80	A change to subheading 8477.10 through 8477.80 from any other subheading, including another subheading within that group.
8477.90	A change to subheading 8477.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8478.10	A change to subheading 8478.10 from any other subheading.
8478.90	A change to subheading 8478.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8479.10–8479.89	A change to subheading 8479.10 through 8479.89 from any other subheading, including another subheading within that group.
8479.90	A change to subheading 8479.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8480	A change to heading 8480 from any other heading.
8481.10–8481.80	A change to subheading 8481.10 through 8481.80 from any other heading, or from subheading 8481.90 except when resulting from a simple assembly.
8481.90	A change to subheading 8481.90 from any other heading.
8482.10–8482.80	(i) A change to subheading 8482.10 through 8482.80 from any other heading, or;

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	(ii) A change to subheading 8482.10 through 8482.80 from any other subheading, including another subheading within that group, *provided* that either the inner *and* outer races are domestic materials, or the balls/rollers are domestic materials.
8482.91–8482.99	A change from 8482.91 through 8482.99 from any other heading.
8483.10	A change to subheading 8483.10 from any other subheading.
8483.20	A change to subheading 8483.20 from any other subheading, except from subheading 8482.10 through 8482.80.
8483.30–8483.60	A change to subheading 8483.30 through 8483.60 from any other subheading, including another subheading within that group.
8483.90	A change to subheading 8483.90 from any other heading.
8484.10–8484.90	A change to subheading 8484.10 through 8484.90 from any other subheading, including another subheading within that group.
8485	A change to subheading 8485 from any other heading.
8501	A change to heading 8501 from any other heading.
8502	A change to heading 8502 from any other heading.
8503	A change to heading 8503 from any other heading.
8504.10–8504.50	A change to subheading 8504.10 through 8504.50 from any other subheading, outside that group.
8504.90	A change to subheading 8504.90 from any other heading.
8505.11–8505.30	A change to subheading 8505.11 through 8505.30 from any other subheading, including another subheading within that group.
8505.90	A change to subheading 8505.90 from any other heading.
8506.11–8506.20	A change to subheading 8506.11 through 8506.20 from any other subheading, including another subheading within that group.
8506.90	A change to subheading 8506.90 from any other heading.
8507.10–8507.80	A change to subheading 8507.10 through 8507.80 from any other subheading, including another subheading within that group.
8507.90	A change to subheading 8507.90 from any other heading.
8508.10–8508.80	A change to subheading 8508.10 through 8508.80 from any other subheading, including another subheading within that group.
8508.90	A change to subheading 8508.90 from any other heading, except heading 8501 when resulting from simple assembly.
8509.10–8509.80	A change to subheading 8509.10 through 8509.80 from any other subheading, including another subheading within that group.
8509.90	A change to subheading 8509.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8510.10–8510.20	A change to subheading 8510.10 through 8510.20 from any other subheading, including another subheading within that group.
8510.90	A change to subheading 8510.90 from any other heading, except heading 8501 when resulting from a simple assembly.
8511.10–8511.80	A change to subheading 8511.10 through 8511.80 from any other subheading, including another subheading within that group.
8511.90	A change to subheading 8511.90 from any other heading.
8512.10–8512.30	A change to subheading 8512.10 through 8512.30 from any subheading outside that group.
8512.40	A change to subheading 8512.40 from any other subheading, except when resulting from a simple assembly.
8512.90	A change to subheading 8512.90 from any other heading.
8513.10	A change to subheading 8513.10 from any other subheading.
8513.90	A change to subheading 8513.90 from any other heading.
8514.10–8514.40	A change to subheading 8514.10 through 8514.40 from any other subheading, including another subheading within that group.
8514.90	A change to subheading 8514.90 from any other heading.
8515.11–8515.80	A change to subheading 8515.11 through 8515.80 from any other subheading, outside that group.
8515.90	A change to subheading 8515.90 from any other heading.
8516.10–8516.79	A change to subheading 8516.10 through 8516.79 from any other subheading, including another subheading within that group.
8516.80	A change to subheading 8516.80 from any other heading.
8516.90	A change to subheading 8516.90 from any other heading.
8517.10–8517.82	A change to subheading 8517.10 through 8517.82 from any other subheading, including another subheading within that group, except when resulting from a simple assembly.
8517.90	A change to subheading 8517.90 from any other heading.
8518.10–8518.50	A change to subheading 8518.10 through 8518.50 from any other heading.
8518.90	A change to subheading 8518.90 from any other heading.
8519.10–8521.90	A change to subheading 8519.10 through 8521.90 from any other subheading, including another subheading within that group.
8522	A change to heading 8522 from any other heading.
8523	A change to heading 8523 from any other heading.
8524	A change to heading 8524 from any other heading.
8525.10–8525.20	A change to subheading 8525.10 through 8525.20 from any other subheading outside that group.
8525.30	A change to subheading 8525.30 from any other subheading.
8526.10–8526.92	A change to subheading 8526.10 through 8526.92 from any other subheading, including another subheading within that group.
8527.11–8527.90	A change to subheading 8527.11 through 8527.90 from any other subheading, including another subheading within that group.
8528.10–8528.20	A change to subheading 8528.10 through 8528.20 from any other subheading, including another subheading within that group.
8529	A change to heading 8529 from any other heading.
8530.10–8530.80	A change to subheading 8530.10 through 8530.80 from any other subheading, including another subheading within that group.
8530.90	A change to subheading 8530.90 from any other heading.

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8531.10–8531.80	A change to subheading 8531.10 through 8531.80 from any other subheading, including another subheading within that group, except when resulting from a simple assembly.
8531.90	A change to subheading 8531.90 from any other heading.
8532.10–8532.30	A change to subheading 8532.10 through 8532.30 from any other subheading, including another subheading within that group.
8532.90	A change to subheading 8532.90 from any other heading.
8533.10–8533.40	A change to subheading 8533.10 through 8533.40 from any other subheading, including another subheading within that group.
8533.90	A change to subheading 8533.90 from any other heading.
8534	A change to heading 8534 from any other heading.
8535.10–8535.90	A change to subheading 8535.10 through 8535.90 from any other subheading, including another subheading within that group.
8536.10–8536.90	A change to subheading 8536.10 through 8536.90 from any other subheading, including another subheading within that group.
8537	A change to heading 8537 from any other heading.
8538	A change to heading 8538 from any other heading.
8539.10–8539.40	A change to subheading 8539.10 through 8539.40 from any other subheading, including another subheading within that group.
8539.90	A change to subheading 8539.90 from any other heading.
8540.11–8540.89	A change to subheading 8540.11 through 8540.89 from any other subheading, including another subheading within that group.
8540.91–8540.99	A change to subheading 8540.91 through 8540.99 from any other subheading, including another subheading within that group, except when resulting from a simple assembly.
8541–8542	A change to heading 8541 through 8542 from any other subheading including another subheading within that group, or from an unmounted chip, die or wafer provided for in 8541 or 8542, or, a change to any programmed chips from any unprogrammed chips.
8543.10–8543.80	A change to subheading 8543.10 through 8543.30 from any other subheading, including another subheading within that group.
8543.90	A change to subheading 8543.90 from any other heading.
8544.11–8544.70	A change to subheading 8544.11 through 8544.70 from any other subheading, except when resulting from a simple assembly.
8545–8548	A change to heading 8545 through 8548 from any other subheading, including another subheading within that group.
(q)	**Section XVII: Chapters 86 through 89**
8601	A change to heading 8601 from any other heading.
8602	A change to heading 8602 from any other heading.
8603–8606	A change to heading 8603 through 8606 from any heading including a heading within that group, except from heading 8607 when that change is pursuant to GRI 2(a).
8607.11	A change to subheading 8607.11 from any other subheading, except from subheading 8607.12, and except from subheading 8607.19 when that change is pursuant to GRI 2(a).
8607.12	A change to subheading 8607.12 from any other subheading, except subheading 8607.11, and except from subheading 8607.19 when that change is pursuant to GRI 2(a).
8607.19	A change to subheading 8607.19 from any other subheading.
8607.21–8607.99	A change to subheading 8607.21 through 8607.99 from any other heading, except to mounted brake linings and pads of subheading 8607.21 through 8607.99 from subheading 6813.10.
8608	A change to heading 8608 from any other heading.
8609	A change to heading 8609 from any other heading, except heading 7309 through 7311.
8701–8705	A change to heading 8701–8705 from any other heading except heading 8706.
8706	A change to heading 8706 from any other heading.
8707	A change to heading 8707 from any other heading, except a change from subheading 8708.29 if that change is pursuant to GRI 2(a).

Note: Any change to heading 8708 from subheadings 8709.90, 8716.90, 8431.20 and 8431.49 shall not be considered to satisfy a required change in tariff classification.

8708.10–8708.29	A change to subheading 8708.10 through 8708.29 from any other subheading.
8708.31	A change to subheading 8708.31 from any other heading, except to mounted brake linings and pads of subheading 8708.31 from subheading 6813.10.
8708.39	A change to subheading 8708.39 from any other heading.
8708.40	A change to subheading 8708.40 from any other subheading, except from subheading 8708.99 when that change is pursuant to GRI 2(a).
8708.50	A change to subheading 8708.50 from any other subheading, except from subheading 8708.99 when that change is pursuant to GRI 2(a).
8708.60	A change to subheading 8708.60 from any other subheading.
8708.70	A change to subheading 8708.70 from any other subheading.
8708.80	A change to subheading 8708.80 from any other subheading, except from subheading 8708.99 when that change is pursuant to GRI 2(a).
8708.91	A change to subheading 8708.91 from any other subheading, except from subheading 8708.99 when that change is pursuant to GRI 2(a).
8708.92	A change to subheading 8708.92 from any other subheading.
8708.93	A change to subheading 8708.93 from any other subheading.
8708.94	A change to subheading 8708.94 from any other subheading, except from subheading 8708.99 when that change is pursuant to GRI 2(a).

HTSUS	Tariff shift and/or other requirements
8708.99	A change to subheading 8708.99 from any other chapter; or A change to subheading 8708.99 from any other subheading US/Mex [provided there is a substantial transformation].
8709.11–8709.19	A change to subheading 8709.11 through 8709.19 from any other subheading outside that group, except a change from subheading 8709.90 if that change is pursuant to GRI 2(a).
8709.90	A change to subheading 8709.90 from any other heading, except subheading 8431.20 or heading 8709.
8710	A change to heading 8710 from any other heading.
8711–8713	A change to heading 8711 through 8713 from any other heading, including another heading within that group, except a change from heading 8714 if that change is pursuant to GRI 2(a).
8714	A change to heading 8714 from any other heading, except a change from subheading 6813.10 to mounted brake linings or pads of heading 8714.
8715	A change to heading 8715 from any other heading.
8716.10–8716.80	A change to subheading 8716.10 through 8716.80 from any other heading, except a change from subheading 8716.90 if that change is pursuant to GRI 2(a).
8716.90	A change to subheading 8716.90 from any other heading except a change from subheading 8709.90, and 8431.49.
8801–8802	A change to heading 8801 through 8802 from any heading outside that group, except from subheading 8803 pursuant to GRI 2(a).
8803.10–8803.90	A change to subheading 8803.10 through 8803.90 from any other subheading within that group
8804–8805	A change to heading 8804 through 8805 from any other heading, within that group.
8901–8903	A change to heading 8901 through 8903 from any heading outside that group.
8904	A change to heading 8904 from any other heading.
8905	A change to heading 8905 from any other chapter.
8906–8907	A change to heading 8906 through 8907 from any other heading, including another heading within that group except from heading 8903 and 8905.
8908	A change to heading 8908 from any other chapter.
(r)	**Section XVIII: Chapters 90 through 92**
9001.10	A change to subheading 9001.10 from any other subheading, including another subheading within that group, except from subheading 8544.70.
9001.20–9001.30	A change to subheading 9001.20 through 9001.30 from any other subheading, including another subheading within that group.
9001.40–9001.90	A change to subheading 9001.40 through 9001.90 from any other subheading, including another subheading within that group, except from lens blanks of subheadings 7014.00 and 7015.10.
9002.11–9002.90	A change to subheading 9002.11 through 9002.90 from any other subheading, including another subheading within that group, except from subheading 9001.90 and lens blanks of subheading 7014.00.
9003.11–9003.19	(i) A change to subheading 9003.11 through 9003.19 from any other heading, or (ii) A change to subheading 9003.11 through 9003.19 from any other subheading, including another subheading within that group, except from subheading 9003.90, unless the temples or fronts are domestically produced.
9003.90	A change to subheading 9003.90 from any other heading.
9004	A change to heading 9004 from any other heading, except from subheading 9001.40 or 9001.50.
9005.10–9005.80	A change to subheading 9005.10 through 9005.80 from any other subheading, including another subheading within that group.
9005.90	A change to subheading 9005.90 from any other heading, except from headings 9001 and 9002.
9006.10–9006.69	A change to subheading 9006.10 through 9006.69 from any other subheading, including another subheading with that group.
9006.91–9006.99	A change to subheading 9006.91 through 9006.99 from any other heading.
9007.11–9007.29	A change to subheading 9007.11 through 9007.29 from any other subheading, including another subheading within that group.
9007.91–9007.92	A change to subheading 9007.91 through 9007.92 from any other heading, except from lenses of heading 9002, when resulting from a simple assembly.
9008.10–9008.40	A change to subheading 9008.10 through 9008.40 from any other subheading, including another subheading within that group.
9008.90	A change to subheading 9008.90 from any other heading, except from lenses of heading 9002, when resulting from a simple assembly.
9009.11–9009.30	A change to subheading 9009.11 through 9009.30 from any other subheading, including another subheading within that group.
9009.90	A change to subheading 9009.90 from any other heading.
9010.10–9010.30	A change to subheading 9010.10 through 9010.30 from any other subheading, including another subheading within that group.
9010.90	A change to subheading 9010.90 from any other heading.
9011.10–9011.80	A change to subheading 9011.10 through 9011.80 from any other subheading, including another subheading within that group.
9011.90	A change to subheading 9011.90 from any other heading.
9012.10	A change to subheading 9012.10 from any other subheading, including another subheading within that group.
9012.90	A change to subheading 9012.90 from any other heading.
9013.10	A change to subheading 9013.10 from any other subheading, including another subheading within that group, except from optical telescopes of subheading 9005.80.
9013.20–9013.80	A change to subheading 9013.20 through 9013.80 from any other subheading, including another subheading within that group.
9013.90	A change to subheading 9013.90 from any other subheading, including another subheading within that group, except from subheading 9002.19, when resulting from a simple assembly.
9014.10–9014.80	A change to subheading 9014.10 through 9014.80 from any other subheading, including another subheading within that group.
9014.90	A change to subheading 9014.90 from any other heading.

HTSUS	Tariff shift and/or other requirements
9015.10–9015.80	A change to subheading 9015.10 through 9015.80 from any other subheading, including another subheading within that group.
9015.90	A change to subheading 9015.90 from any other heading.
9016	A change to heading 9016 from any other heading.
9017.10–9017.80	A change to subheading 9017.10 through 9017.80 from any other subheading, including another subheading within that group.
9017.90	A change to subheading 9017.90 from any other heading.
9018.11–9018.19	A change to subheading 9018.11 through 9018.19 from any other subheading, including another subheading within that group, except from electrocardiographs, or patient monitoring systems from printed circuit assemblies, when resulting from a simple assembly.
9018.20–9018.32	A change to subheading 9018.20 through 9018.32 from any other subheading, including another subheading within that group.
9018.39	A change to subheading 9018.39 from any other subheading, including another subheading within that group, except from surgical tubing of subheading 4009.10, when resulting from a simple assembly.
9018.41–9018.50	A change to subheading 9018.41 through 9018.50 from any other subheading, including another subheading within that group.
9018.90	A change to subheading 9018.90 from any other subheading, including another subheading within that group, except from subheading 9001.90, when resulting from a simple assembly, or synthetic rubber of heading 4002, when resulting from a simple assembly; or A change to defibrillators from printed circuit assemblies, except when resulting from a simple assembly.
9019.10–9019.20	A change to subheading 9019.10 through 9019.20 from any other subheading, including another subheading within that group.
9020	A change to heading 9020 from any other heading.
9021.11	A change to subheading 9021.11 from any other subheading, including another subheading within that group.
9021.19	A change to subheading 9021.19 from any other subheading, including another subheading within that group, except from nails of heading 7317, when resulting from a simple assembly or screws of heading 7318, when resulting from a simple assembly.
9021.21–9021.90	A change to subheading 9021.21 through 9021.90 from any other subheading, including another subheading within that group.
9022.11–9022.90	A change to subheading 9022.11 through 9022.90 from any other subheading, including another subheading within that group.
9023	A change to heading 9023 from any other heading.
9024.10–9024.80	A change to subheading 9024.10 through 9024.80 from any other subheading, including another subheading within that group.
9024.90	A change to subheading 9024.90 from any other heading.
9025.11–9025.80	A change to subheading 9025.11 through 9025.80 from any other subheading, including another subheading within that group.
9025.90	A change to subheading 9025.90 from any other heading.
9026.10–9026.80	A change to subheading 9026.10 through 9026.80 from any other subheading, including another subheading within that group.
9026.90	A change to subheading 9026.90 from any other heading.
9027.10–9027.90	A change to subheading 9027.10 through 9027.90 from any other subheading, including another subheading within that group.
9028.10–9028.30	A change to subheading 9028.10 through 9028.30 from any other subheading, including another subheading within that group.
9028.90	A change to subheading 9028.90 from any other heading.
9029.10–9029.20	A change to subheading 9029.10 through 9029.20 from any other subheading, including another subheading within that group.
9029.90	A change to subheading 9029.90 from any other heading.
9030.10–9030.89	A change to subheading 9030.10 through 9030.89 from any other subheading, including another subheading within that group.
9030.90	A change to subheading 9030.90 from any other heading.
9031.10–9031.80	A change to subheading 9031.10 through 9031.80 from any other subheading, including another subheading within that group.
9031.90	A change to subheading 9031.90 from any other heading.
9032.10–9032.89	A change to subheading 9032.10 through 9032.89 from any other subheading, including another subheading within that group.
9032.90	A change to subheading 9032.90 from any other subheading, including another subheading within that group, except from heading 8537, when resulting from a simple assembly.
9033	A change to heading 9033 from any other heading.
9101–9107	A change to heading 9101 through 9107 from any heading outside that group, except heading 9108 through 9110.
9108–9109	A change to heading 9108 through 9109 from any heading outside that group, except heading 9110.
9110	A change to heading 9110 from any other heading, except from subheading 9114.90; or A change to heading 9110 from subheading 9114.90 if there had been a substantial transformation.
9111.10–9111.80	A change to subheading 9111.10 through 9111.80 from any subheading outside that group, except from subheading 9111.90 when the change is pursuant to GRI 2(a).
9111.90	A change to subheading 9111.90 from any other heading.
9112.10–9112.80	A change to subheading 9112.10 through 9112.80 from any subheading outside that group, except from subheading 9112.90 if the change is pursuant to GRI 2(a).
9112.90	A change to subheading 9112.90 from any other heading.
9113	A change to heading 9113 from any other heading.
9114	A change to heading 9114 from any other heading.
9201–9208	A change to heading 9201 through 9208 from any other heading, including a heading within that group, except a change from heading 9209 if that change is pursuant to GRI 2(a).

HTSUS	Tariff shift and/or other requirements
9209	A change to heading 9209 from any other heading.
(s)	**Section XIX: Chapter 93**
9301–9304	A change to heading 9301 through 9304 from any other heading, including a heading within that group, except from a change to heading 9305 when that change is pursuant to GRI 2(a).
9305	A change to heading 9305 from any other heading.
9306	A change to heading 9306 from any other heading.
9307	A change to heading 9307 from any other heading.
(t)	**Section XX: Chapters 94 through 96**
9401.10–9401.80	A change to subheading 9401.10 through 9401.80 from any subheading outside that group, except subheading 9403.10 through 9403.80, and except a change from subheading 9401.90 or 9403.90 when that change is pursuant to GRI 2(a).
9401.90	A change to subheading 9401.90 from any other heading, except from subheading 9403.90; or A change to subheading 9401.90 from subheading 9403.90 if that change results in a substantial transformation.
9402	A change to heading 9402 from any other heading, except from subheading 9401.10–9401.80, 9403.10–9403.80, and except a change from subheading 9401.90 or 9403.90 when that change is pursuant to GRI 2(a).
9403.10–9403.80	A change to subheading 9403.10 through 9403.80 from any subheading outside that group, except from subheading 9401.10 through 9401.80, and except a change from subheading 9401.90 or 9403.90 when that change is pursuant to GRI 2(a).
9403.90	A change to subheading 9403.90 from any other heading, except from subheading 9401.90; or A change to subheading 9403.90 from subheading 9403.90 if that change results in a substantial transformation.
9404.10–9404.30	A change to subheading 9404.10 through 9404.30 from any subheading outside that group.
9404.90	A change to subheading 9404.90 from any other heading.
9405.10–9405.60	A change to subheading 9405.10 through 9405.60 from any subheading outside that group, except a change from subheading 9405.91 through 9405.99 if that change pursuant to GRI 2(a).
9405.91–9405.99	A change to subheading 9405.91 through 9405.99 from any other heading.
9406	A change to heading 9406 from any other heading.
9501	A change to heading 9501 from any other chapter except from heading 8714 if that change is pursuant to GRI 2(a).
9502.10	A change to subheading 9502.10 from any other subheading, except from skins for stuffed dolls (9502.99.10).
9502.91	A change to subheading 9502.91 from any other chapter except from heading 6111 and 6209.
9502.99	A change to subheading 9502.99 from any other heading, except from subheadings 9503.41 through 9503.49.
9503.10–9503.30	A change to subheading 9503.10 through 9503.30 from any other subheading including another subheading within that group.
9503.41–9503.49	A change to toys of subheading 9503.41 through 9503.49 from any other heading; or A change to toys of subheading 9503.41 through 9503.49 from parts and accessories of subheading 9503.41 through 9503.49; or A change to parts and accessories of 9503.41 through 9503.49 from any other heading, except from heading 9502, 6111, or 6209.
9503.50–9503.60	A change to subheading 9503.50 through 9503.60 from any other subheading, including another subheading within that group.
9503.70–9503.90	A change to subheading 9503.70 through 9503.90 from any other chapter.
9504.10–9506.99	A change to heading 9504.10 through 9506.99 from any other subheading, including within that group.
9507.10–9507.30	A change to subheading 9507.10 through 9507.30 from any other chapter.
9507.10–9507.30	A change to subheading 9507.10 through 9507.30 from any other chapter.
9507.90	A change to subheading 9507.90 from any other subheading, except from heading 5004 through 5006, 5402.10 through 5402.49, 5406.10 through 5406.20, 5603 and 5404.
9508	A change to heading 9508 from any other heading.
9601	A change to heading 9601 from any other heading.
9602	A change to heading 9602 from any other heading.
9603	A change to heading 9603 from any other heading.
9604–9605	A change to heading 9604 through 9605 from any other heading, including another heading within that group.
9606.10	A change to subheading 9606.10 from any other heading.
9606.21–9606.29	A change to subheading 9606.21 through 9606.29 from any other heading; or A change to subheading 9606.21 through 9606.29 from any other subheading if there is a substantial transformation.
9606.30	A change to subheading 9606.30 from any other heading.
9607.11–9607.19	A change to subheading 9607.11 through 9607.19 from any other subheading, except a change from subheading 9607.20 when that change is pursuant to GRI 2(a).
9607.20	A change to subheading 9607.20 from any other subheading.
9608.10–9608.40	A change to subheading 9608.10 through 9608.40 from any other subheading including another subheading within that group, except from subheading 9608.60.
9608.50	A change to 9608.50 from any other heading.
9608.60–9608.99	A change to subheading 9608.60 through 9608.99 from any other subheading including another subheading within that group.
9609.10	A change to subheading 9609.10 from any other subheading.
9609.20	A change to subheading 9609.20 from any other chapter.
9609.90	A change to subheading 9609.90 from any other chapter.
9610–9612	A change to heading 9610 through 9612 from any other heading, including another heading within that group.
9613.10–9613.20	A change to subheading 9613.10 through 9613.20 from any other subheading outside that group.
9613.30–9613.80	A change to subheading 9613.30 through 9613.80 from any other subheading, including from a subheading within that group.
9913.90	A change to subheading 9613.90 from any other heading.
9614.10	A change to subheading 9614.10 from any other heading except from heading 4407.

HTSUS	Tariff shift and/or other requirements
9614.20	A change to subheading 9614.20 from any other subheading.
9614.90	A change to subheading 9614.90 from any other heading.
9615.11–9615.90	A change to subheading 9615.11 through 9615.90 from any other subheading including another subheading within that group.
9616–9618	A change to heading 9616 through 9618 from any other heading, including another heading within that group
(u)	**Section XXI: Chapter 97**
9701–9706	A change to 9701 through 9706 from any other subheading, including another subheading within that group.

PART 134—COUNTRY OF ORIGIN MARKING

4. The authority citation for part 134 continues to read as follows:

Authority: 5 U.S.C. 301; 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1304, 1624.

5. Section 134.32 is amended by adding a new paragraph (r) to read as follows:

§ 134.32 General exceptions to marking requirements.

* * * * *

(r) Except for articles that are included within the scope of § 12.130 of this Chapter, articles of United States origin (determined as such under part 102 of this Chapter prior to exportation from the U.S.) that are exported for repairs or alterations and returned.

* * * * *

6. Section 134.43 is amended by adding a new paragraph (e) to read as follows:

§ 134.43 Methods of marking specific articles.

* * * * *

(e) *Articles returned to the U.S. after having been advanced in value or improved in condition outside the United States.* Where the country of origin of an article is determined in accordance with § 102.14, part 102 of this Chapter, such article, at the choice of the importer, exporter or producer of the good, may be marked, as appropriate, in a manner such as the following:

(1) Assembled in (name of foreign country) from U.S components;

(2) Further processed in (name of country of origin) from U.S. materials;

(3) Product of (name of foreign country) made from U.S. components; or

(4) Product of (name of foreign country).

George J. Weise,

Commissioner of Customs.

Approved: December 17, 1993.

John P. Simpson,

Deputy Assistant Secretary of the Treasury.

[FR Doc. 93–31852 Filed 12–30–93; 8:45 am]

BILLING CODE 4820–02–P

DEPARTMENT OF THE TREASURY

Customs Service

19 CFR Parts 4, 10, 12, 102, 134, and 177

RIN 1515–AB19

Rules of Origin Applicable to Imported Merchandise

AGENCY: U S. Customs Service, Department of the Treasury.

ACTION: Notice of proposed rulemaking.

SUMMARY: This document proposes to amend the Customs Regulations to set forth uniform rules governing the determination of the country of origin of imported merchandise. These rules would codify existing principles used for determining when under the customs laws an article "is wholly the growth, product or manufacture" of a country or when an article is "a new and different article" [or article of commerce] as a result of a manufacturing process in a given country. The proposed rules are intended to codify the present country of origin rules in order to provide rules that are more objective and transparent and thereby to provide greater certainty and predictability for both the trade community and the Customs Service in making country of origin determinations required under existing laws and regulations.

DATES: Comments must be received on or before April 4, 1994.

ADDRESSES: Written comments (preferably in triplicate) may be addressed to U.S. Customs Service, 1301 Constitution Avenue, NW., Franklin Court, Washington, DC 20229, and they may be inspected at the Regulations Branch located at 1099 14th St. NW., suite 4000, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Sandra L. Gethers, Office of Regulations and Rulings (202–482–6980).

SUPPLEMENTARY INFORMATION:

Background

On September 25, 1991, a document was published in the **Federal Register** (56 FR 48448) proposing to amend the Customs Regulations to set forth a uniform rule governing the determination of the country of origin of imported merchandise which is wholly obtained or produced in a single country. The document also proposed to amend the Customs Regulations to establish rules, for determining the country of origin of imported goods, and solicited comments on those proposals. Customs has refined the original proposal and has decided to issue this second proposal regarding uniform rules for the determination of the country of origin of imported merchandise.

All goods imported into the United States are subject to a determination as to their country of origin because origin determinations affect the treatment of imported goods under various laws. Examples of laws that involve country of origin determinations include laws regarding admissibility, duty assessment, country of origin marking, and quota administration.

The rules of origin as historically applied in the United States reflect tests and criteria developed through the years in judicial decisions and in Customs interpretations of those judicial decisions. In more recent years, the importance of rules of origin has been demonstrated by the adoption of statutory or regulatory origin rules applicable in specific contexts, including for purposes of government procurement, certain duty-preference programs, and the U.S. textile import program.

An article may be grown or mined or otherwise extracted from the ground in a country and not be further processed prior to exportation. Such an article is "wholly the growth or product" of that country and as such has its origin in that country because it reflects no materials or processing attributable to any other country. Similarly, an article may be processed or manufactured exclusively in a country from materials wholly grown or produced in that same country. In such a case the article is "wholly the product or manufacture" of that country and thus has its origin in that country because, again, it reflects no materials or processing attributable to any other country. The U.S. origin rule in these cases is expressed by the phrase "wholly the growth, product, or manufacture of a country" (or "wholly grown, produced, or manufactured in a country").

The more problematic origin determinations arise when an article is not wholly the growth, product, or manufacture of a country. In these other, more problematic determinations, the product in question incorporates or reflects materials and/or processing which are attributable to two or more countries. In such cases origin is determined based on the effect of processing performed on materials or articles which originated in another country. Under the current judicially-developed test, a case-by-case determination is made as to whether the processing is such that it results in a "new and different article" (or "new and different article of commerce") having a "new name, character, and use" which is different from that which existed prior to the processing; Customs has expressed this test as the "substantial transformation" rule. Under this rule, the country of origin of an imported article is considered to be the last country in which a substantial transformation took place (in other words, the country in which the imported article assumed its final and distinctive identity prior to importation).

Notwithstanding the long history of the substantial transformation rule, its administration has not been without problems. These problems devolve from the fact that application of the substantial transformation rule is on a case-by-case basis and often involves subjective judgments as to what constitutes a new and different article or as to whether processing has resulted in a new name, character, and use. As a result, application of the substantial transformation rule has remained essentially non-systematic in that a judicial or administrative determination in one case more often than not has little or no bearing on another case involving a different factual pattern. Thus, while judicial and administrative decisions involving the substantial transformation rule may have some value as restatements or refinements of the basic rule, they are often of little assistance in resolving individual cases involving the myriad of issues or tests that have arisen, such as the distinction between producer's goods and consumer's goods, the significance of further manufacturing or finishing operations, and the issue of dedication to use. The very fact that the substantial transformation rule has been the subject of a large number of judicial and administrative determinations is testament to the basic problem: The case-by-case approach, involving application of the rule based on specific sets of facts, has led to varied case-specific interpretations of the basic rule, resulting in a lack of predictability which in turn has engendered a significant degree of uncertainty both within Customs and in the trade community as regards the effect that a particular type of processing should have on an origin determination.

The United States-Canada Free-Trade Agreement (CFTA), Public Law 100–449, 102 Stat. 1851 (codified at 19 U.S.C. 2112 note), sets forth rules for determining the origin of goods for purposes of duty preference under the CFTA. Those rules, which are set forth in General Note 3 HTSUS, and the rules of origin in Chapter 4 of the North American Free Trade Agreement

(NAFTA), which will supplant the CFTA rules, provide that goods will have their origin (1) in the country in which they are wholly obtained or produced, or (2) in the case of goods not wholly obtained or produced in a country, in the country in which they were transformed so as to be subject to a specified change in tariff classification (with minimum value-added requirements applying in addition to a tariff classification change in certain cases). The change in tariff classification standard was specifically developed as an alternative to the traditional substantial transformation rule in order to obviate the problems described above. Customs believes that rules based upon the change in tariff classification approach, would provide by virtue of their greater specificity, more objectivity, transparency, and predictability in origin determinations. Consequently, Customs is proposing to adopt a system of country of origin determination rules based on change in tariff classification that would be applicable to all merchandise imported into the United States. To that end, this document would amend interim regulations (19 CFR part 102) published in today's **Federal Register**, that follow the change in tariff classification approach applicable to North American products.

Discussion of Proposals

This document proposes to amend the interim regulations as set forth in part 102 of the Customs Regulations, published elsewhere in today's issue of the **Federal Register**, to make them uniformly applicable to all merchandise imported into the United States. The background section of the interim regulations as well as the regulatory text of part 102, is applicable to this document. This document proposes to amend § 102.0 to set forth the scope of areas for which the rules of origin set forth in part 102 are proposed to be used to make country of origin determinations. These proposed rules of origin will be applicable for all purposes for which the "product of" or "country of origin" criterion is prescribed by statute. As this position would be consistent (except in the case of waste and scrap which are treated as if they originated as raw materials) with the position Customs has always taken regarding the concept of goods "wholly grown, produced or manufactured" in one country, including under preferential trade arrangements, such as the Generalized System of Preferences (GSP) and Caribbean Basin Initiative (CBI) statutes and regulations, Customs proposes that this definition apply for all purposes under the Customs and related laws and the navigation laws of the United States (for example, for duty assessment and country of origin marking purposes). Consequently, this document proposes to amend all provisions where the phrase, "wholly the growth, product or manufacture", or "wholly obtained or produced" or a similar phrase, is used in the current regulations for origin purposes, by including cross-references to the definition of "wholly obtained or produced in a country" set forth in the proposed § 102.1(g).

Moreover, since the new rules of origin include specific tariff rules (tariff classification change and/or specific operations) which codify the "substantial transformation" rule, i.e., the criteria for determining whether a good has become a "new and different article of commerce" as a result of a manufacturing process in a given country, and provide the results that would be reached under a case-by-case application of the substantial transformation rule, the new rules would apply for all purposes where "substantial transformation" currently is specified in the Customs Regulations as the test for determining origin under Customs law. This does not include origin determinations under antidumping, countervailing duty, or government procurement statutes, although the authorities responsible for promulgating determinations under those statutes may avail themselves of these rules if they so choose. The proposed amendments to part 134 concerning country of origin marking also clarify that the substantial transformation rule currently used for identifying an ultimate purchaser is the same rule that is used for determining the country of origin of a foreign article imported into the United States. Proposed changes were also made to parts 4, 10, 12, and 177, Customs Regulations (19 CFR parts 4, 10, 12, and 177).

The Interim Regulations set forth in Part 102 also are proposed to be used to determine whether a good meets the "product of" criterion for receiving duty preferences under General Note 3(a)(iv), 3(c)(ii), (viii), (ix) (Insular Possessions, Generalized System of Preferences (GSP), Caribbean Basin Economic Recovery Act (CBERA), Freely Associated States, Andean Trade Preferences Act (ATPA) and following bilateral consultations now underway, under General Note 3(c)(vi) [the United States-Israel Free-Trade Agreement]. The value content requirements under these provisions, however, must still be met in order for a good to qualify for the duty preference.

Comments

Before adopting the proposed amendments, consideration will be given to any written comments (preferably in triplicate) timely submitted to Customs. Comments submitted will be available for public inspection in accordance with the Freedom of Information Act (5 U.S.C. 552), and applicable Treasury Department Regulations (31 CFR 1.4) and Customs Regulations (19 CFR 103.11(b)), on normal business days between the hours of 9 a.m. and 4:30 p.m. at the Regulations and Disclosure Law Branch.

Comments submitted in response to this **Federal Register** document, need not be duplicated in response to the Interim Rulemaking document relating to the Rules of Origin for the NAFTA published in today's **Federal Register** Comments in response to one document will be considered during the review of both documents.

Executive Order 12866

This document does not meet the criteria for a "significant regulatory action" as specified in E.O. 12866.

Regulatory Flexibility Act

Pursuant to the provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), it is certified that the proposed regulations amendments will not have a significant economic impact on a substantial number of small entities. Accordingly, the proposed amendments are not subject to the regulatory analysis or other requirements of 5 U.S.C. 603 and 604.

List of Subjects

19 CFR Part 4

Customs duties and inspection, Freight, Harbors, Imports, Maritime carriers, Reporting and recordkeeping requirements, Vessels.

19 CFR Part 10

Customs duties and inspection, Imports, Reporting and recordkeeping requirements.

19 CFR Part 12

Customs duties and inspection, Labeling, Marking, Reporting and recordkeeping requirements, Textiles and textile products.

19 CFR Part 102

Customs duties and inspections, Imports, Reporting and recordkeeping requirements, Rules of origin, Trade agreements.

19 CFR Part 134

Country of origin, Customs duties and inspections, Imports, Labeling, Marking, Packaging and containers.

19 CFR Part 177

Administrative practice and procedures, Customs duties and inspection, Imports, Reporting and recordkeeping requirements.

Proposed Amendments to the Regulations

Accordingly, it is proposed to amend Chapter I of Title 19, Code of Federal Regulations (19 CFR Chapter I), by amending parts 4, 10, 12, 102, 134, and 177 as set forth below:

PART 4—VESSELS IN FOREIGN AND DOMESTIC TRADES

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

Authority: 5 U.S.C. 301; 19 U.S.C. 66, 1624; 46 U.S.C. App. 3.

2. Section 4.80b is amended by adding a sentence at the end of paragraph (a) to read as follows:

§ 4.80b Coastwise transportation of merchandise.

(a) * * * For purposes of determining whether merchandise is manufactured or processed into a new and different product under this section, the rules set forth in part 102 of this chapter (regarding the determination of whether goods are substantially transformed in a country) shall apply.

* * * * *

PART 10—ARTICLES CONDITIONALLY FREE, SUBJECT TO A REDUCED RATE, ETC.

1. The general authority citation for Part 10 continues to read as follows:

Authority: 19 U.S.C. 66, 1202, 1481, 1484, 1498, 1508, 1623, 1624;

2. Section 10.12 is amended by revising the last sentence of paragraph (e) to read as follows:

§ 10.12 Definitions.

* * * * *

(e) * * * If the article consists wholly or partially of foreign components or materials, the manufacturing process must be such that the foreign components or materials have been substantially transformed as provided in § 10.14(b) of this part.

3. Section 10.14 is amended by revising the text in paragraph (b) preceding the examples to read as follows:

§ 10.14 Fabricated components subject to the exemption.

* * * * *

(b) *Substantial transformation of foreign-made articles or materials.* Foreign-made articles or materials will become products of the United States if they undergo a process of manufacture in the United States which results in their substantial transformation. Substantial transformation occurs when under part 102 of this Chapter, the country of origin of a good which is produced in the United States from foreign materials is determined to be the United States.

* * * * *

4. Section 10.171 is amended by adding a new paragraph (c) to read as follows:

§ 10.171 General.

* * * * *

(c) *Wholly the growth, product, or manufacture defined.* For purposes of §§ 10.171 through 10.178, the expression "wholly the growth, product, or manufacture" refers to articles and materials wholly obtained or produced within the meaning of § 102.1(g) of this chapter.

5. Section 10.176(a) is revised to read as follows:

§ 10.176 Country of origin criteria.

(a) Any article which is (1) either wholly the growth, product, or manufacture of a beneficiary developing country or of any two or more countries which are members of the same association of countries, or a new or different article of commerce which has been grown, produced, or manufactured in a beneficiary developing country and (2) imported directly from such beneficiary developing country or member countries, may qualify for duty-free entry under the Generalized System of Preferences (GSP). However, duty free entry under GSP may be accorded only if: (i) The sum of the cost or value of the materials produced in the beneficiary developing country or any two or more countries which are members of the same association of countries which is treated as one country under section 502(a)(3), Trade Act of 1974, as amended (19 U.S.C. 2462(a)(3)), plus (ii) the direct costs of processing operations performed in such beneficiary developing country or member countries, is not less than 35 percent of the appraised value of the article at the time of its entry into the customs territory of the United States. For purposes of this section, a "new and different article of commerce" exists when under part 102 of this Chapter, the country of origin of a good, which is produced in a beneficiary developing country from foreign materials, is determined to be that beneficiary developing country.

* * * * *

6. Section 10.191 is amended by revising paragraph (b)(3) to read as follows:

§ 10.191 General.

* * * * *

(b) *Definitions.*

* * * * *

(3) *Wholly the growth, product, or manufacture.* For purposes of § 10.191 through § 10.198, the expression "wholly the growth, product, or manufacture" refers to articles and materials wholly obtained or produced within the meaning of § 102.1(g) of this chapter.

* * * * *

7. Section 10.195 is amended by adding a statement at the end of the existing text in paragraph (a)(1) to read as follows:

§ 10.195 Country of origin criteria.

(a) *Articles produced in a beneficiary country—*

(1) * * * For purposes of this section, a "new and different article of commerce" exists when under part 102 of this Chapter, the country of origin of a good, which is produced in a beneficiary country from foreign materials, is determined to be that beneficiary country.

* * * * *

PART 12—SPECIAL CLASSES OF MERCHANDISE

1. The general authority citation for part 12 continues to read as follows:

Authority: 5 U.S.C. 301; 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1304, 1624.

2. Section 12.130 is amended by removing paragraphs (d) and (e) and redesignating paragraphs (f) through (i) as paragraphs (d) through (g), and by revising paragraph (b) to read as follows.

§ 12.130 Textiles and textile products country of origin.

* * * * *

(b) *Country of origin.* For the purpose of this section and except as provided in paragraph (c) a textile or textile product, subject to section 204, Agricultural Act of 1956, as amended, imported into the customs territory of the United States shall be a product of a particular foreign territory or country, insular possession of the U.S., if it is wholly obtained or produced (as defined under § 102.1(g), part 102, of this Chapter) in that foreign territory or

country, or insular possession. However, except as provided in paragraph (c), a textile or textile product, subject to section 204, which consists of materials produced or derived from, or processed in, more than one foreign territory or country, or insular possession of the U.S., shall be a product of that foreign territory or country, or insular possession where it last underwent a substantial transformation. A textile or textile product will be considered to have undergone a substantial transformation when under part 102 of this Chapter, the country of origin of a good, which is produced in a country from foreign materials, is determined to be that country.

* * * * *

PART 102—NON-PREFERENCE RULES OF ORIGIN

1. The authority citation for part 102 continues to read as follows:

Authority: 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1624, and the North American Free-Trade Agreement Implementation Act, Pub.L. 103–182, 107 Stat. 2057.

2. Section 102.0 is revised to read as follows:

§ 102.0 Scope.

This part sets forth rules for determining the country of origin of imported goods for purposes of the Customs and related laws and the navigation laws of the United States. The rules in this part regarding goods wholly obtained or produced in a country are intended to apply for all such purposes. The rules in this part which determine when a good becomes a new and different article or a new or different article of commerce as a result of manufacturing processes in a given country, also are intended to apply for all purposes where this requirement exists for "country of origin" or "product of" determinations under the Customs laws. The rules in this part also will be applied by the United States for determining when a good is a good of a North American Free-Trade Agreement (NAFTA) country for the purposes specified under Annex 311 of the NAFTA.

PART 134—COUNTRY OF ORIGIN MARKING

1. The authority citation for part 134 continues to read as follows:

Authority: 5 U.S.C. 301, 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1304, 1624.

2. Section 134.1 is amended by revising paragraph (b); redesignating current paragraphs (d) through (f) as (e) through (g); adding a new paragraph (d); and revising newly designated paragraphs (e) (1) and (2) to read as follows:

§ 134.1 Definitions.

* * * * *

(b) *Country of origin.* "Country of origin", when used with reference to any article of foreign origin imported into the United States, means the country in which the article was wholly obtained or produced within the meaning of § 102.1(e) of this chapter, or, in the case of an article not wholly obtained or produced in one country, the country where the article last underwent a substantial transformation prior to its importation into the United States.

* * * * *

(d) *Substantial transformation.* "Substantial transformation" occurs when, under part 102 of this Chapter, the country of origin of a good, which is produced in a country from foreign materials, is determined to be that country.

(e) *Ultimate purchaser.* * * *

(1) If an imported article will be used in further processing, the processor will be the "ultimate purchaser" if he subjects the imported article to a process which results in a substantial transformation of the article.

(2) If the process does not result in a substantial transformation of the imported article, the consumer or user of the article, who obtains the article after the processing, will be regarded as the "ultimate purchaser."

* * * * *

3. Section 134.35 is revised to read as follows:

§ 134.35 Articles substantially transformed after importation.

If an imported article will be used in further processing in the United States, the processor will be considered the ultimate purchaser if such article is determined to be a good of the United States under part 102 of this Chapter. In such a case, the imported article is excepted from individual marking pursuant to 19 U.S.C. 1304(a)(3)(D) and § 134.32(d) of this part, provided the container in which it is imported will reasonably indicate the country of origin of the article to the ultimate purchaser.

PART 177—ADMINISTRATIVE RULINGS

1. The general authority citation for part 177 continues to read as follows:

Authority: 5 U.S.C. 301, 19 U.S.C. 66, 1202 (General Note 8, Harmonized Tariff Schedule of the United States), 1624, unless otherwise noted.

§ 177.22 [Amended]

2. Section 177.22(a) is amended by adding at the end the following sentence: "The expression "wholly the growth, product, or manufacture" refers to articles wholly obtained or produced within the meaning of § 102.1(g) of this chapter."

Approved: December 17, 1993.

John P. Simpson,

Deputy Assistant Secretary of the Treasury.

George J. Weise,

Commissioner of Customs.

[FR Doc. 93–31853 Filed 12–30–93; 8:45 am]

BILLING CODE 4820–02–P

federal register

Monday
January 3, 1994

Part III

Department of Labor

Occupational Safety and Health Administration

29 CFR Parts 1915 and 1926

Standard for Cadmium in Shipyard Employment and in Construction Work; Reprint With Corrections and Technical Amendments; Final Rule

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Parts 1915 and 1926

Occupational Safety and Health Standards for Cadmium in Shipyard Employment and Construction

AGENCY: Occupational Safety and Health Administration, Department of Labor.

ACTION: Final rule; miscellaneous corrections, technical amendments, and redesignation.

SUMMARY: The Occupational Safety and Health Administration (OSHA) is correcting an error stemming from the wording of the amendatory language of the final rule that incorporated applicable General Industry standards for toxic substances into the Occupational Safety and Health Standards for Shipyard Employment. The final rule, which appeared in the **Federal Register** on July 1, 1993, had the effect of mistakenly inferring that the cadmium standard for shipyard employment from the Code of Federal Regulations was being deleted though the preamble made it clear it was retained. This correction reprints the full text of the cadmium standard as published on September 14, 1992, and incorporates changes from an April 23, 1993, document that made corrections and amendments to the original publication. In addition, several cross-references regarding employee records are being amended to reflect the designation of a new section in the shipyard employment standards, and a number of effective dates are being converted to dates certain.

In addition, OSHA is redesignating the cadmium standard for construction employment, also published in the same September 14 document, into a different subpart. The redesignation merges it in with the newly created subpart that contains specific toxic substance standards for construction.

EFFECTIVE DATE: July 1, 1993.

FOR FURTHER INFORMATION CONTACT: Mr. James F. Foster, OSHA Office of Public Affairs, Room N–3647, U.S. Department of Labor, 200 Constitution Avenue NW., Washington, DC 20210, telephone (202) 219–8151.

SUPPLEMENTARY INFORMATION:

Background

The final regulations which are the subject of this action was published in the **Federal Register** on June 30 and July 1, 1993 (58 FR 35076 and 35512, respectively). Up until then, most health standards applicable to shipyard employment and construction were not codified in the parts of title 29 of the Code of Federal Regulations that contained the bulk of the standards applicable to shipyards (part 1915) and construction (part 1926). These toxic substance standards were made applicable by cross-reference to subpart Z of the general industry standards (part 1910) and other parts and documents.

The Shipyard Employment Standard Advisory Committee (SESAC) recommended that OSHA incorporate all toxic substance standards covering shipyards into 29 CFR part 1915. As a first step to carry out this recommendation, when OSHA issued the cadmium standard on September 14, 1992 (57 FR 42102), it created a subpart Z in part 1915 to include health standards applicable to shipyards and included the cadmium standard in subpart Z as § 1915.1027. On April 23, 1993 (58 FR 21780), OSHA published a document that made corrections and amendments to the September 14 document. As a second step, OSHA published a technical amendment in the July 1, 1993, issue of the **Federal Register**, which incorporated a comprehensive subpart Z into 29 CFR part 1915. The July 1 document included the other toxic substance standards besides cadmium, and added certain related standards applicable to shipyards.

In similar fashion to what SESAC sought, the Advisory Committee for Construction Safety and Health also asked that OSHA incorporate the general industry standards deemed applicable to construction into OSHA's construction standards. This incorporation of the pertinent 1910 standards into part 1926 was accomplished on June 30, 1993 (58 FR 35076), and in doing so, OSHA created a subpart Z in part 1926, for the applicable specific toxic substance standards.

Need for Correction

As published, the July 1 final regulation contained amendatory language that had the effect of removing the regulatory text and appendixes of § 1915.1027—Cadmium, by mistake. The preamble of that document made it clear that the Cadmium standard remained applicable to shipyard employment (58 FR 35513). This document reinserts the regulatory text and appendices of § 1915.1027 into subpart Z—Toxic and Hazardous Substances of part 1915 along with the corrections and amendments made on April 23, 1993.

In addition, in the July 1 document, the text of existing § 1910.20, entitled "Access to employee exposure and medical records," was reprinted as an additional standard in part 1915, to add it to the shipyard employment standards as new § 1915.1120. OSHA is changing cross-references in paragraphs (m) and (n) of the cadmium standard to reflect the designation for the new section regarding employee records within part 1915. These changes are to § 1915.1027(m)(4)(iii)(H), where the reference to "§ 1910.20(g) (1) and (2)" is changed to read "§ 1915.1120(g) (1) and (2)"; in § 1915.1027(n) (1)(iii), (3)(iii), and (5)(i), the reference to "29 CFR 1910.20" is changed to read "§ 1915.1120 of this part"; and in § 1915.1027(n)(6), the reference to "29 CFR 1910.20(h)" is changed to read "§ 1915.1120(h) of this part."

In this document, OSHA is also converting a number of effective dates that were not computed to dates certain. As published on September 14, 1992, the standard included over a dozen effective dates that were based on the effective dates of the cadmium document, such as for 60 and 90 days after the section or standard became effective. These dates, set out in paragraphs (p)(2)(i)–(viii) (57 FR 42399) are being computed in this document. The following list details the specific instances where these changes are made:

- In § 1915.1027(p)(2)(i), the words "60 days after the effective date of this standard" are changed to read "February 12, 1993";
- In § 1915.1027(p)(2)(vi)(A), the words "60 days after the effective date of this section" are changed to read "February 12, 1993";
- In § 1915.1027(p)(2) (ii) and (iii), the words "90 days after the effective date of this section" are changed to read "March 15, 1993";
- In § 1915.1027(p)(2) (vii) and (viii), the words "90 days after the effective date of this standard" are changed to read "March 15, 1993";
- In § 1915.1027(p)(2)(i), the words "120 days after the effective date of this standard" are changed to read "April 14, 1993";
- In § 1915.1027(p)(2) (ii) and (iii), the words "150 days after the effective date of this section" are changed to read "May 14, 1993";
- In § 1915.1027(p)(2) (vii) and (viii), the words "180 days after the effective date of this standard" are changed to read "June 14, 1993";
- In § 1915.1027(p)(2) (iv) and (iv)(B), the words "1 year after the effective date of this section" are changed to read "December 14, 1993"; and

• In § 1915.1027(p)(2)(v), the words "two (2) years after the effective date of this section" are changed to read "December 14, 1994."

When it was published in the same September 14, 1992, document, at 57 FR 42452, the cadmium standard for construction was codified as § 1926.63 in subpart D, which covers occupational health and environmental controls. With the publication of the June 30, 1993, document that created a separate subpart Z for specific toxic substances within OSHA's construction standards, it follows that the cadmium standard belongs with the new subpart. Therefore, this document is redesignating § 1926.63 as § 1926.1127, to place it in the appropriate place subpart Z of the construction standards.

In addition, in the June 30 document, the text of existing § 1910.20, entitled "Access to employee exposure and medical records," was reprinted as an additional standard in part 1926, to add it to the construction standards as new § 1926.33. OSHA is amending cross-references in paragraphs (m) and (n) of the cadmium standard (redesignated as § 1926.1127) to reflect the designation for the new section regarding employee records within part 1926. These changes are to paragraph (m)(4)(iii)(H), where the reference to "§ 1910.20(g) (1) and (2)" is changed to read "§ 1926.33(g) (1) and (2)", in paragraphs (n) (1)(iii), (3)(iii), and (5)(i), where the reference to "29 CFR 1910.20" is changed to read "§ 1926.33 of this part"; and in paragraph (n)(6), the reference to "29 CFR 1910.20(h)" is changed to read "§ 1926.33(h) of this part."

The corrections and technical amendments in this document are not substantive regulatory actions, and therefore are not required to have notice, comment, or an advance effective date. They are being made retroactively effective, as of July 1, 1993, to make it clear that the cadmium standard has been in effect covering shipyard employment since December 14, 1992. The cadmium standard remained in effect subsequent to the July 1, 1993, **Federal Register** document, as was OSHA's clearly expressed intent.

List of Subjects

29 CFR Part 1915

Air contaminants, Hazardous materials, Hazard communication, Laboratories, Medical records, Occupational safety and health, Recordkeeping, Shipyards, Shipbuilding, Ship repairing, Shipbreaking, Toxic chemicals.

29 CFR Part 1926

Construction industry, Hazardous materials, Occupational safety and health, Protective equipment.

Authority and Signature

This document was prepared under the direction of Joseph A. Dear, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210.

Accordingly, pursuant to sections 4, 6, and 8 of the Occupational Safety and Health Act (29 U.S.C. 653, 655, and 657); section 107 of the Contract Work Hours and Safety Standards Act (Construction Safety Act) (40 U.S.C. 333); section 41 Longshore and Harbor Workers Compensation Act (33 U.S.C. 941); section 4 of the Administrative Procedure Act (5 U.S.C. 553); and Secretary of Labor's Order No. 1–90 (55 FR 9033); OSHA is issuing these corrections and technical amendments.

Signed at Washington, DC, 17th day of December, 1993.

Joseph A. Dear,

Assistant Secretary of Labor

Accordingly, 29 CFR part 1915, subpart Z is corrected by the following amendment:

PART 1915—OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR SHIPYARD EMPLOYMENT

1. The authority citation for subpart Z of part 1915 continues to read as follows:

Authority: Sections 4, 6, 8 Occupational Safety and Health Act, 29 U.S.C. 653, 655, 657; Sec. 4 of the Administrative Procedure Act, 5 U.S.C. 553; Secretary of Labor's Orders 12–71 (36 FR 8754), 8–76 (41 FR 25059), 9–83 (48 FR 35736), or 1–90 (55 FR 9033), as applicable; and 29 CFR part 1911.

Subpart Z—Toxic and Hazardous Substances [Amended]

2. Subpart Z of part 1915 is corrected by adding the text and appendices of § 1915.1027 as follows:

§ 1915.1027 Cadmium.

(a) *Scope.* This standard applies to all occupational exposures to cadmium and cadmium compounds, in all forms, and in all industries covered by the Occupational Safety and Health Act, except the construction-related industries, which are covered under 29 CFR 1926.63.

(b) *Definitions.*

Action level (AL) is defined as an airborne concentration of cadmium of 2.5 micrograms per cubic meter of air (2.5 μg/m³), calculated as an 8-hour time-weighted average (TWA).

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Authorized person means any person authorized by the employer and required by work duties to be present in regulated areas or any person authorized by the OSH Act or regulations issued under it to be in regulated areas.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee

Employee exposure and similar language referring to the air cadmium level to which an employee is exposed means the exposure to airborne cadmium that would occur if the employee were not using respiratory protective equipment.

Final medical determination is the written medical opinion of the employee's health status by the examining physician under paragraphs (l)(3)-(12) of this section or, if multiple physician review under paragraph (l)(13) of this section or the alternative physician determination under paragraph (l)(14) of this section is invoked, it is the final, written medical finding, recommendation or determination that emerges from that process.

High-efficiency particulate air (HEPA) filter means a filter capable of trapping and retaining at least 99.97 percent of mono-dispersed particles of 0.3 micrometers in diameter.

Regulated area means an area demarcated by the employer where an employee's exposure to airborne concentrations of cadmium exceeds, or can reasonably be expected to exceed the permissible exposure limit (PEL).

This section means this cadmium standard.

(c) *Permissible Exposure Limit (PEL).* The employer shall assure that no employee is exposed to an airborne concentration of cadmium in excess of five micrograms per cubic meter of air (5 μg/m³), calculated as an eight-hour time-weighted average exposure (TWA).

(d) *Exposure monitoring*—(1) *General.* (i) Each employer who has a workplace or work operation covered by this section shall determine if any employee may be exposed to cadmium at or above the action level.

(ii) Determinations of employee exposure shall be made from breathing zone air samples that reflect the monitored employee's regular, daily 8-hour TWA exposure to cadmium.

(iii) Eight-hour TWA exposures shall be determined for each employee on the basis of one or more personal breathing

zone air samples reflecting full shift exposure on each shift, for each job classification, in each work area. Where several employees perform the same job tasks, in the same job classification, on the same shift, in the same work area, and the length, duration, and level of cadmium exposures are similar, an employer may sample a representative fraction of the employees instead of all employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) expected to have the highest cadmium exposures.

(2) *Specific.* (i) Initial monitoring. Except as provided for in paragraphs (d)(2)(ii) and (d)(2)(iii) of this section, the employer shall monitor employee exposures and shall base initial determinations on the monitoring results.

(ii) Where the employer has monitored after September 14, 1991, under conditions that in all important aspects closely resemble those currently prevailing and where that monitoring satisfies all other requirements of this section, including the accuracy and confidence levels of paragraph (d)(6) of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of paragraph (d)(2)(i) of this section.

(iii) Where the employer has objective data, as defined in paragraph (n)(2) of this section, demonstrating that employee exposure to cadmium will not exceed the action level under the expected conditions of processing, use, or handling, the employer may rely upon such data instead of implementing initial monitoring.

(3) *Monitoring Frequency (periodic monitoring).* (i) If the initial monitoring or periodic monitoring reveals employee exposures to be at or above the action level, the employer shall monitor at a frequency and pattern needed to represent the levels of exposure of employees and where exposures are above the PEL to assure the adequacy of respiratory selection and the effectiveness of engineering and work practice controls. However, such exposure monitoring shall be performed at least every six months. The employer, at a minimum, shall continue these semi-annual measurements unless and until the conditions set out in paragraph (d)(3)(ii) of this section are met.

(ii) If the initial monitoring or the periodic monitoring indicates that employee exposures are below the action level and that result is confirmed by the results of another monitoring taken at least seven days later, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(4) *Additional monitoring.* The employer also shall institute the exposure monitoring required under paragraphs (d)(2)(i) and (d)(3) of this section whenever there has been a change in the raw materials, equipment, personnel, work practices, or finished products that may result in additional employees being exposed to cadmium at or above the action level or in employees already exposed to cadmium at or above the action level being exposed above the PEL, or whenever the employer has any reason to suspect that any other change might result in such further exposure.

(5) *Employee notification of monitoring results.* (i) Within 15 working days after the receipt of the results of any monitoring performed under this section, the employer shall notify each affected employee individually in writing of the results. In addition, within the same time period the employer shall post the results of the exposure monitoring in an appropriate location that is accessible to all affected employees.

(ii) Wherever monitoring results indicate that employee exposure exceeds the PEL, the employer shall include in the written notice a statement that the PEL has been exceeded and a description of the corrective action being taken by the employer to reduce employee exposure to or below the PEL.

(6) *Accuracy of measurement.* The employer shall use a method of monitoring and analysis that has an accuracy of not less than plus or minus 25 percent (± 25%), with a confidence level of 95 percent, for airborne concentrations of cadmium at or above the action level, the permissible exposure limit (PEL), and the separate engineering control air limit (SECAL).

(e) *Regulated areas*—(1) *Establishment.* The employer shall establish a regulated area wherever an employee's exposure to airborne concentrations of cadmium is, or can reasonably be expected to be in excess of the permissible exposure limit (PEL)

(2) *Demarcation.* Regulated areas shall be demarcated from the rest of the workplace in any manner that adequately establishes and alerts employees of the boundaries of the regulated area.

(3) *Access.* Access to regulated areas shall be limited to authorized persons.

(4) *Provision of respirators.* Each person entering a regulated area shall be supplied with and required to use a respirator, selected in accordance with paragraph (g)(2) of this section.

(5) *Prohibited activities.* The employer shall assure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas, carry the products associated with these activities into regulated areas, or store such products in those areas.

(f) *Methods of compliance*—(1) *Compliance hierarchy* (i) Except as specified in paragraphs (f)(1) (ii), (iii) and (iv) of this section the employer shall implement engineering and work practice controls to reduce and maintain employee exposure to cadmium at or below the PEL, except to the extent that the employer can demonstrate that such controls are not feasible.

(ii) Except as specified in paragraphs (f)(1) (iii) and (iv) of this section, in industries where a separate engineering control air limit (SECAL) has been specified for particular processes (See Table 1 in this paragraph (f)(1)(ii)), the employer shall implement engineering and work practice controls to reduce and maintain employee exposure at or below the SECAL, except to the extent that the employer can demonstrate that such controls are not feasible.

TABLE 1.—SEPARATE ENGINEERING CONTROL AIRBORNE LIMITS (SECALS) FOR PROCESSES IN SELECTED INDUSTRIES

Industry	Process	SECAL ($\mu g/m^3$)
Nickel cadmium battery	Plate making, plate preparation	50
	All other processes	15
Zinc/Cadmium refining*	Cadmium refining, casting, melting, oxide production, sinter plant	50
Pigment manufacture	Calcine, crushing, milling, blending	50
	All other processes	15
Stabilizers*	Cadmium oxide charging, crushing, drying, blending	50
Lead smelting*	Sinter plant, blast furnace, baghouse, yard area	50

TABLE 1.—SEPARATE ENGINEERING CONTROL AIRBORNE LIMITS (SECALS) FOR PROCESSES IN SELECTED INDUSTRIES—Continued

Industry	Process	SECAL (µg/m³)
Plating*	Mechanical plating	15

*Processes in these industries that are not specified in this table must achieve the PEL using engineering controls and work practices as required in f(1)(i).

(iii) The requirement to implement engineering and work practice controls to achieve the PEL or, where applicable, the SECAL does not apply where the employer demonstrates the following:

(A) The employee is only intermittently exposed; and

(B) The employee is not exposed above the PEL on 30 or more days per year (12 consecutive months).

(iv) Wherever engineering and work practice controls are required and are not sufficient to reduce employee exposure to or below the PEL or, where applicable, the SECAL, the employer nonetheless shall implement such controls to reduce exposures to the lowest levels achievable. The employer shall supplement such controls with respiratory protection that complies with the requirements of paragraph (g) of this section and the PEL.

(v) The employer shall not use employee rotation as a method of compliance.

(2) *Compliance program.* (i) Where the PEL is exceeded, the employer shall establish and implement a written compliance program to reduce employee exposure to or below the PEL by means of engineering and work practice controls, as required by paragraph (f)(1) of this section. To the extent that engineering and work practice controls cannot reduce exposures to or below the PEL, the employer shall include in the written compliance program the use of appropriate respiratory protection to achieve compliance with the PEL.

(ii) Written compliance programs shall include at least the following:

(A) A description of each operation in which cadmium is emitted; e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices;

(B) A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to cadmium, as well as, where necessary, the use of appropriate respiratory protection to achieve the PEL;

(C) A report of the technology considered in meeting the PEL;

(D) Air monitoring data that document the sources of cadmium emissions;

(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;

(F) A work practice program that includes items required under paragraphs (h), (i), and (j) of this section;

(G) A written plan for emergency situations, as specified in paragraph (h) of this section; and

(H) Other relevant information.

(iii) The written compliance programs shall be reviewed and updated at least annually, or more often if necessary, to reflect significant changes in the employer's compliance status.

(iv) Written compliance programs shall be provided upon request for examination and copying to affected employees, designated employee representatives as well as to the Assistant Secretary, and the Director.

(3) *Mechanical ventilation.* (i) When ventilation is used to control exposure, measurements that demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure shall be made as necessary to maintain its effectiveness.

(ii) Measurements of the system's effectiveness in controlling exposure shall be made as necessary within five working days of any change in production, process, or control that might result in a significant increase in employee exposure to cadmium.

(iii) Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the system shall have a high efficiency filter and be monitored to assure effectiveness.

(iv) Procedures shall be developed and implemented to minimize employee exposure to cadmium when maintenance of ventilation systems and changing of filters is being conducted.

(g) *Respirator protection*—(1) *General* Where respirators are required by this section, the employer shall provide them at no cost to the employee and shall assure that they are used in compliance with the requirements of this section. Respirators shall be used in the following circumstances:

(i) Where exposure levels exceed the PEL, during the time period necessary to install or implement feasible engineering and work practice controls;

(ii) In those maintenance and repair activities and during those brief or intermittent operations where exposures exceed the PEL and engineering and work practice controls are not feasible or are not required;

(iii) In regulated areas, as prescribed in paragraph (e) of this section;

(iv) Where the employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL;

(v) In emergencies;

(vi) Wherever an employee who is exposed to cadmium at or above the action level requests a respirator;

(vii) Wherever an employee is exposed above the PEL in an industry to which a SECAL is applicable; and

(viii) Wherever an employee is exposed to cadmium above the PEL and engineering controls are not required under paragraph (f)(1)(iii) of this section.

(2) *Respirator selection.* (i) Where respirators are required under this section, the employer shall select and provide the appropriate respirator as specified in Table 2 in this paragraph (g)(2)(i). The employer shall select respirators from among those jointly approved as acceptable protection against cadmium dust, fume, and mist by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR part 11.

TABLE 2.—RESPIRATORY PROTECTION FOR CADMIUM

Airborne concentration or condition of use [a]	Required respirator type [b]
10 × or less	A half mask, air-purifying respirator equipped with a HEPA [c] filter.[d]
25 × or less	A powered air-purifying respirator ("PAPR") with a loose-fitting hood or helmet equipped with a HEPA filter, or a supplied-air respirator with a loose-fitting hood or helmet facepiece operated in the continuous flow mode.
50 × or less	A full facepiece air-purifying respirator equipped with a HEPA filter, or a powered air-purifying respirator with a tight-fitting half mask equipped with a HEPA filter, or a supplied air respirator with a tight-fitting half mask operated in the continuous flow mode.
250 × or less	A powered air-purifying respirator with a tight-fitting full facepiece equipped with a HEPA filter, or a supplied-air respirator with a tight-fitting full facepiece operated in the continuous flow mode.
1000 × or less	A supplied-air respirator with half mask or full facepiece operated in the pressure demand or other positive pressure mode.
>1000 × or unknown concentrations	A self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode, or a supplied-air respirator with a full facepiece operated in the pressure demand or other positive pressure mode and equipped with an auxiliary escape type self-contained breathing apparatus operated in the pressure demand mode.
Fire fighting	A self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

[a] Concentrations expressed as multiple of the PEL.
[b] Respirators assigned for higher environmental concentrations may be used at lower exposure levels. Quantitative fit testing is required for all tight-fitting air purifying respirators where airborne concentration of cadmium exceeds 10 times the TWA PEL (10×5 μg/m³=50 μg/m³). A full facepiece respirator is required when eye irritation is experienced.
[c] HEPA means High Efficiency Particulate Air.
[d] Fit testing, qualitative or quantitative, is required.
SOURCE: *Respiratory Decision Logic*, NIOSH, 1987.

(ii) The employer shall provide a powered, air-purifying respirator (PAPR) in lieu of a negative pressure respirator wherever:

(A) An employee entitled to a respirator chooses to use this type of respirator; and

(B) This respirator will provide adequate protection to the employee.

(3) *Respirator program.* (i) Where respiratory protection is required, the employer shall institute a respirator protection program in accordance with 29 CFR 1910.134.

(ii) The employer shall permit each employee who is required to use an air purifying respirator to leave the regulated area to change the filter elements or replace the respirator whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

(iii) The employer shall also permit each employee who is required to wear a respirator to leave the regulated area to wash his or her face and the respirator facepiece whenever necessary to prevent skin irritation associated with respirator use.

(iv) If an employee exhibits difficulty in breathing while wearing a respirator during a fit test or during use, the employer shall make available to the employee a medical examination in accordance with paragraph (l)(6)(ii) of this section to determine if the employee can wear a respirator while performing the required duties.

(v) No employee shall be assigned a task requiring the use of a respirator if, based upon his or her most recent examination, an examining physician determines that the employee will be unable to continue to function normally while wearing a respirator. If the physician determines the employee must be limited in, or removed from his or her current job because of the employee's inability to wear a respirator, the limitation or removal shall be in accordance with paragraphs (l) (11) and (12) of this section.

(4) *Respirator fit testing.* (i) The employer shall assure that the respirator issued to the employee is fitted properly and exhibits the least possible facepiece leakage.

(ii) For each employee wearing a tight-fitting, air purifying respirator (either negative or positive pressure) who is exposed to airborne concentrations of cadmium that do not exceed 10 times the PEL (10 × 5 μg/m³ = 50 μg/m³), the employer shall perform either quantitative or qualitative fit testing at the time of initial fitting and at least annually thereafter. If quantitative fit testing is used for a negative pressure respirator, a fit factor that is at least 10 times the protection factor for that class of respirators (Table 2 in paragraph (g)(2)(i) of this section) shall be achieved at testing.

(iii) For each employee wearing a tight-fitting air purifying respirator (either negative or positive pressure) who is exposed to airborne concentrations of cadmium that exceed 10 times the PEL (10 × 5 μg/m³ = 50 μg/m³), the employer shall perform quantitative fit testing at the time of initial fitting and at least annually thereafter. For negative-pressure respirators, a fit factor that is at least 10 times the protection factor for that class of respirators (Table 2 in paragraph (g)(2)(i) of this section) shall be achieved during quantitative fit testing.

(iv) For each employee wearing a tight-fitting, supplied-air respirator or self-contained breathing apparatus, the employer shall perform quantitative fit testing at the time of initial fitting and at least annually thereafter. This shall be accomplished by fit testing an air purifying respirator of identical type facepiece, make, model, and size as the supplied air respirator or self-contained breathing apparatus that is equipped with HEPA filters and tested as a surrogate (substitute) in the negative pressure mode. A fit factor that is at least 10 times the protection factor for that class of respirators (Table 2 in paragraph (g)(2)(i) of this section) shall be achieved during quantitative fit testing. A supplied-air respirator or self-contained breathing apparatus with the same type facepiece, make, model, and size as the air purifying respirator with which the employee passed the quantitative fit test may then be used by that employee up to the protection factor listed in Table 2 for that class of respirators.

(v) Fit testing shall be conducted in accordance with appendix C of this section.

(h) *Emergency situations.* The employer shall develop and implement

a written plan for dealing with emergency situations involving substantial releases of airborne cadmium. The plan shall include provisions for the use of appropriate respirators and personal protective equipment. In addition, employees not essential to correcting the emergency situation shall be restricted from the area and normal operations halted in that area until the emergency is abated.

(i) *Protective work clothing and equipment*—(1) *Provision and use.* If an employee is exposed to airborne cadmium above the PEL or where skin or eye irritation is associated with cadmium exposure at any level, the employer shall provide at no cost to the employee, and assure that the employee uses, appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments. Protective work clothing and equipment includes, but is not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, head coverings, and boots or foot coverings; and

(iii) Face shields, vented goggles, or other appropriate protective equipment that complies with 29 CFR 1910.133.

(2) *Removal and storage.* (i) The employer shall assure that employees remove all protective clothing and equipment contaminated with cadmium at the completion of the work shift and do so only in change rooms provided in accordance with paragraph (j)(1) of this section.

(ii) The employer shall assure that no employee takes cadmium-contaminated protective clothing or equipment from the workplace, except for employees authorized to do so for purposes of laundering, cleaning, maintaining, or disposing of cadmium contaminated protective clothing and equipment at an appropriate location or facility away from the workplace.

(iii) The employer shall assure that contaminated protective clothing and equipment, when removed for laundering, cleaning, maintenance, or disposal, is placed and stored in sealed, impermeable bags or other closed, impermeable containers that are designed to prevent dispersion of cadmium dust.

(iv) The employer shall assure that bags or containers of contaminated protective clothing and equipment that are to be taken out of the change rooms or the workplace for laundering, cleaning, maintenance or disposal shall bear labels in accordance with paragraph (m)(3) of this section.

(3) *Cleaning, replacement, and disposal.* (i) The employer shall provide the protective clothing and equipment required by paragraph (i)(1) of this section in a clean and dry condition as often as necessary to maintain its effectiveness, but in any event at least weekly. The employer is responsible for cleaning and laundering the protective clothing and equipment required by this paragraph to maintain its effectiveness and is also responsible for disposing of such clothing and equipment.

(ii) The employer also is responsible for repairing or replacing required protective clothing and equipment as needed to maintain its effectiveness. When rips or tears are detected while an employee is working they shall be immediately mended, or the worksuit shall be immediately replaced.

(iii) The employer shall prohibit the removal of cadmium from protective clothing and equipment by blowing, shaking, or any other means that disperses cadmium into the air.

(iv) The employer shall assure that any laundering of contaminated clothing or cleaning of contaminated equipment in the workplace is done in a manner that prevents the release of airborne cadmium in excess of the permissible exposure limit prescribed in paragraph (c) of this section.

(v) The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with cadmium of the potentially harmful effects of exposure to cadmium and that the clothing and equipment should be laundered or cleaned in a manner to effectively prevent the release of airborne cadmium in excess of the PEL.

(j) *Hygiene areas and practices*—(1) *General.* For employees whose airborne exposure to cadmium is above the PEL, the employer shall provide clean change rooms, handwashing facilities, showers, and lunchroom facilities that comply with 29 CFR 1910.141.

(2) *Change rooms.* The employer shall assure that change rooms are equipped with separate storage facilities for street clothes and for protective clothing and equipment, which are designed to prevent dispersion of cadmium and contamination of the employee's street clothes.

(3) *Showers and handwashing facilities.* (i) The employer shall assure that employees who are exposed to cadmium above the PEL shower during the end of the work shift.

(ii) The employer shall assure that employees whose airborne exposure to cadmium is above the PEL wash their hands and faces prior to eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics.

(4) *Lunchroom facilities.* (i) The employer shall assure that the lunchroom facilities are readily accessible to employees, that tables for eating are maintained free of cadmium, and that no employee in a lunchroom facility is exposed at any time to cadmium at or above a concentration of 2.5 $\mu g/m^3$.

(ii) The employer shall assure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface cadmium has been removed from the clothing and equipment by HEPA vacuuming or some other method that removes cadmium dust without dispersing it.

(k) *Housekeeping.* (1) All surfaces shall be maintained as free as practicable of accumulations of cadmium.

(2) All spills and sudden releases of material containing cadmium shall be cleaned up as soon as possible.

(3) Surfaces contaminated with cadmium shall, wherever possible, be cleaned by vacuuming or other methods that minimize the likelihood of cadmium becoming airborne.

(4) HEPA-filtered vacuuming equipment or equally effective filtration methods shall be used for vacuuming. The equipment shall be used and emptied in a manner that minimizes the reentry of cadmium into the workplace.

(5) Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other methods that minimize the likelihood of cadmium becoming airborne have been tried and found not to be effective.

(6) Compressed air shall not be used to remove cadmium from any surface unless the compressed air is used in conjunction with a ventilation system designed to capture the dust cloud created by the compressed air.

(7) Waste, scrap, debris, bags, containers, personal protective equipment, and clothing contaminated with cadmium and consigned for disposal shall be collected and disposed of in sealed impermeable bags or other closed, impermeable containers. These bags and containers shall be labeled in accordance with paragraph (m)(2) of this section.

(l) *Medical surveillance*—(1) *General*—(i) *Scope.* (A) Currently exposed—The employer shall institute a medical surveillance program for all employees who are or may be exposed to cadmium at or above the action level unless the employer demonstrates that the employee is not, and will not be, exposed at or above the action level on 30 or more days per year (twelve consecutive months); and,

(B) Previously exposed—The employer shall also institute a medical surveillance program for all employees who prior to the effective date of this section might previously have been exposed to cadmium at or above the action level by the employer, unless the employer demonstrates that the employee did not prior to the effective date of this section work for the employer in jobs with exposure to cadmium for an aggregated total of more than 60 months.

(ii) To determine an employee's fitness for using a respirator, the employer shall provide the limited medical examination specified in paragraph (l)(6) of this section.

(iii) The employer shall assure that all medical examinations and procedures required by this standard are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects section of appendix A to this section, the regulatory text of this section, the protocol for sample handling and laboratory selection in appendix F to this section, and the questionnaire of appendix D to this section. These examinations and procedures shall be provided without cost to the employee and at a time and place that is reasonable and convenient to employees.

(iv) The employer shall assure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (β_2-M) taken from employees under this section is done in a manner that assures their reliability and that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (β_2-M) taken from employees under this section is performed in laboratories with demonstrated proficiency for that particular analyte. (See appendix F to this section.)

(2) *Initial examination.* (i) The employer shall provide an initial (preplacement) examination to all employees covered by the medical surveillance program required in paragraph (l)(1)(i) of this section. The examination shall be provided to those employees within 30 days after initial assignment to a job with exposure to cadmium or no later than 90 days after the effective date of this section, whichever date is later.

(ii) The initial (preplacement) medical examination shall include:

(A) A detailed medical and work history, with emphasis on: Past, present, and anticipated future exposure to cadmium; any history of renal, cardiovascular, respiratory, hematopoietic, reproductive, and/or musculo-skeletal system dysfunction; current usage of medication with potential nephrotoxic side-effects; and smoking history and current status; and

(B) Biological monitoring that includes the following tests:

(1) Cadmium in urine (CdU), standardized to grams of creatinine (g/Cr);

(2) Beta-2 microglobulin in urine (β_2-M), standardized to grams of creatinine (g/Cr), with pH specified, as described in appendix F to this section; and

(3) Cadmium in blood (CdB), standardized to liters of whole blood (lwb).

(iii) Recent Examination: An initial examination is not required to be provided if adequate records show that the employee has been examined in accordance with the requirements of paragraph (l)(2)(ii) of this section within the past 12 months. In that case, such records shall be maintained as part of the employee's medical record and the prior exam shall be treated as if it were an initial examination for the purposes of paragraphs (l)(3) and (4) of this section.

(3) *Actions triggered by initial biological monitoring.* (i) If the results of the initial biological monitoring tests show the employee's CdU level to be at or below 3 μg/g Cr, β_2-M level to be at or below 300 μg/g Cr and CdB level to be at or below 5 μg/lwb, then:

(A) For currently exposed employees, who are subject to medical surveillance under paragraph (l)(1)(i)(A) of this section, the employer shall provide the minimum level of periodic medical surveillance in accordance with the requirements in paragraph (l)(4)(i) of this section; and

(B) For previously exposed employees, who are subject to medical surveillance under paragraph (l)(1)(i)(B) of this section, the employer shall provide biological monitoring for CdU, β_2-M, and CdB one year after the initial biological monitoring and then the employer shall comply with the requirements of paragraph (l)(4)(v) of this section.

(ii) For all employees who are subject to medical surveillance under paragraph (l)(1)(i) of this section, if the results of the initial biological monitoring tests show the level of CdU to exceed 3 μg/g Cr, the level of β_2-M to exceed 300 μg/g Cr, or the level of CdB to exceed 5 μg/lwb, the employer shall:

(A) Within two weeks after receipt of biological monitoring results, reassess the employee's occupational exposure to cadmium as follows:

(*1*) Reassess the employee's work practices and personal hygiene;

(*2*) Reevaluate the employee's respirator use, if any, and the respirator program;

(*3*) Review the hygiene facilities;

(*4*) Reevaluate the maintenance and effectiveness of the relevant engineering controls;

(*5*) Assess the employee's smoking history and status;

(B) Within 30 days after the exposure reassessment, specified in paragraph (l)(3)(ii)(A) of this section, take reasonable steps to correct any deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium; and,

(C) Within 90 days after receipt of biological monitoring results, provide a full medical examination to the employee in accordance with the requirements of paragraph (l)(4)(ii) of this section. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. If the physician determines that medical removal is not necessary, then until the employee's CdU level falls to or below 3 μg/g Cr, β_2-M level falls to or below 300 μg/g Cr and CdB level falls to or below 5 μg/lwb, the employer shall:

(*1*) Provide biological monitoring in accordance with paragraph (l)(2)(ii)(B) of this section on a semiannual basis; and

(*2*) Provide annual medical examinations in accordance with paragraph (l)(4)(ii) of this section.

(iii) For all employees who are subject to medical surveillance under paragraph (l)(1)(i) of this section, if the results of the initial biological monitoring tests show the level of CdU to be in excess of 15 μg/g Cr, or the level of CdB to be in excess of 15 μg/lwb, or the level of β_2-M to be in excess of 1,500 μg/g Cr, the employer shall comply with the requirements of paragraphs (l)(3)(ii)(A)–(B) of this section. Within 90 days after receipt of biological monitoring results, the employer shall provide a full medical examination to the employee in accordance with the requirements of paragraph (l)(4)(ii) of this section. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 15 μg/g Cr; or CdB exceeds 15 μg/lwb; or β_2-M exceeds 1500 μg/g Cr, and in addition CdU

exceeds 3 μg/g Cr or CdB exceeds 5 μg/liter of whole blood, then the physician shall medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this paragraph. If the employee is not required to be removed by the mandatory provisions of this paragraph or by the physician's determination, then until the employee's CdU level falls to or below 3 μg/g Cr, β_2-M level falls to or below 300 μg/g Cr and CdB level falls to or below 5 μg/lwb, the employer shall:

(A) Periodically reassess the employee's occupational exposure to cadmium;

(B) Provide biological monitoring in accordance with paragraph (l)(2)(ii)(B) of this section on a quarterly basis; and

(C) Provide semiannual medical examinations in accordance with paragraph (l)(4)(ii) of this section.

(iv) For all employees to whom medical surveillance is provided, beginning on January 1, 1999, and in lieu of paragraphs (l)(3)(i)–(iii) of this section:

(A) If the results of the initial biological monitoring tests show the employee's CdU level to be at or below 3 μg/g Cr, β_2-M level to be at or below 300 μg/g Cr and CdB level to be at or below 5 μg/lwb, then for currently exposed employees, the employer shall comply with the requirements of paragraph (l)(3)(i)(A) of this section, and for previously exposed employees, the employer shall comply with the requirements of paragraph (l)(3)(i)(B) of this section;

(B) If the results of the initial biological monitoring tests show the level of CdU to exceed 3 μg/g Cr, the level of β_2-M to exceed 300 μg/g Cr, or the level of CdB to exceed 5 μg/lwb, the employer shall comply with the requirements of paragraphs (l)(3)(ii)(A)–(C) of this section; and,

(C) If the results of the initial biological monitoring tests show the level of CdU to be in excess of 7 μg/g Cr, or the level of CdB to be in excess of 10 μg/lwb, or the level of β_2-M to be in excess of 750 μg/g Cr, the employer shall: Comply with the requirements of paragraphs (l)(3)(ii)(A)–(B) of this section; and, within 90 days after receipt of biological monitoring results, provide a full medical examination to the employee in accordance with the requirements of paragraph (l)(4)(ii) of this section. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 7 μg/g Cr; or CdB exceeds 10 μg/lwb; or β_2-M exceeds 750 μg/g Cr, and in addition CdU exceeds 3 μg/g Cr or CdB exceeds 5 μg/liter of whole blood, then the physician shall medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this paragraph. If the employee is not required to be removed by the mandatory provisions of this paragraph or by the physician's determination, then until the employee's CdU level falls to or below 3 μg/g Cr, β_2-M level falls to or below 300 μg/g Cr and CdB level falls to or below 5 μg/lwb, the employer shall: periodically reassess the employee's occupational exposure to cadmium; provide biological monitoring in accordance with paragraph (l)(2)(ii)(B) of this section on a quarterly basis; and provide semiannual medical examinations in accordance with paragraph (l)(4)(ii) of this section.

(4) *Periodic medical surveillance.* (i) For each employee who is covered under paragraph (l)(1)(i)(A) of this section, the employer shall provide at least the minimum level of periodic medical surveillance, which consists of periodic medical examinations and periodic biological monitoring. A periodic medical examination shall be provided within one year after the initial examination required by paragraph (l)(2) of this section and thereafter at least biennially. Biological sampling shall be provided at least annually, either as part of a periodic medical examination or separately as periodic biological monitoring.

(ii) The periodic medical examination shall include:

(A) A detailed medical and work history, or update thereof, with emphasis on: Past, present and anticipated future exposure to cadmium; smoking history and current status; reproductive history; current use of medications with potential nephrotoxic side-effects; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculo-skeletal system dysfunction; and as part of the medical and work history, for employees who wear respirators, questions 3–11 and 25–32 in Appendix D to this section;

(B) A complete physical examination with emphasis on: Blood pressure, the respiratory system, and the urinary system;

(C) A 14 inch by 17 inch, or a reasonably standard sized posterior-anterior chest X-ray (after the initial X-ray, the frequency of chest X-rays is to be determined by the examining physician);

(D) Pulmonary function tests, including forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV1);

(E) Biological monitoring, as required in paragraph (l)(2)(ii)(B) of this section;

(F) Blood analysis, in addition to the analysis required under paragraph (l)(2)(ii)(B) of this section, including blood urea nitrogen, complete blood count, and serum creatinine;

(G) Urinalysis, in addition to the analysis required under paragraph (l)(2)(ii)(B) of this section, including the determination of albumin, glucose, and total and low molecular weight proteins;

(H) For males over 40 years old, prostate palpation, or other at least as effective diagnostic test(s); and

(I) Any additional tests deemed appropriate by the examining physician.

(iii) Periodic biological monitoring shall be provided in accordance with paragraph (l)(2)(ii)(B) of this section.

(iv) If the results of periodic biological monitoring or the results of biological monitoring performed as part of the periodic medical examination show the level of the employee's CdU, β_2-M, or CdB to be in excess of the levels specified in paragraphs (l)(3) (ii) or (iii); or, beginning on January 1, 1999, in excess of the levels specified in paragraphs (l)(3) (ii) or (iv) of this section, the employer shall take the appropriate actions specified in paragraphs (l)(3)(ii)–(iv) of this section.

(v) For previously exposed employees under paragraph (l)(1)(i)(B) of this section:

(A) If the employee's levels of CdU did not exceed 3 μg/g Cr, CdB did not exceed 5 μg/lwb, and β_2-M did not exceed 300 μg/g Cr in the initial biological monitoring tests, and if the results of the followup biological monitoring required by paragraph (l)(3)(i)(B) of this section one year after the initial examination confirm the previous results, the employer may discontinue all periodic medical surveillance for that employee.

(B) If the initial biological monitoring results for CdU, CdB, or β_2-M were in excess of the levels specified in paragraph (l)(3)(i) of this section, but

subsequent biological monitoring results required by paragraph (l)(3)(ii)–(iv) of this section show that the employee's CdU levels no longer exceed 3 μg/g Cr, CdB levels no longer exceed 5 μg/lwb, and β_2-M levels no longer exceed 300 μg/g Cr, the employer shall provide biological monitoring for CdU, CdB, and β_2-M one year after these most recent biological monitoring results. If the results of the followup biological monitoring, specified in this paragraph, confirm the previous results, the employer may discontinue all periodic medical surveillance for that employee.

(C) However, if the results of the follow-up tests specified in paragraph (l)(4)(v)(A) or (B) of this section indicate that the level of the employee's CdU, β_2–M, or CdB exceeds these same levels, the employer is required to provide annual medical examinations in accordance with the provisions of paragraph (l)(4)(ii) of this section until the results of biological monitoring are consistently below these levels or the examining physician determines in a written medical opinion that further medical surveillance is not required to protect the employee's health.

(vi) A routine, biennial medical examination is not required to be provided in accordance with paragraphs (l)(3)(i) and (l)(4) of this section if adequate medical records show that the employee has been examined in accordance with the requirements of paragraph (l)(4)(ii) of this section within the past 12 months. In that case, such records shall be maintained by the employer as part of the employee's medical record, and the next routine, periodic medical examination shall be made available to the employee within two years of the previous examination.

(5) *Actions triggered by medical examinations.* (i) If the results of a medical examination carried out in accordance with this section indicate any laboratory or clinical finding consistent with cadmium toxicity that does not require employer action under paragraph (l)(2), (3) or (4) of this section, the employer, within 30 days, shall reassess the employee's occupational exposure to cadmium and take the following corrective action until the physician determines they are no longer necessary:

(A) Periodically reassess: The employee's work practices and personal hygiene; the employee's respirator use, if any; the employee's smoking history and status; the respiratory protection program; the hygiene facilities; and the maintenance and effectiveness of the relevant engineering controls;

(B) Within 30 days after the reassessment, take all reasonable steps to correct the deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium;

(C) Provide semiannual medical reexaminations to evaluate the abnormal clinical sign(s) of cadmium toxicity until the results are normal or the employee is medically removed; and

(D) Where the results of tests for total proteins in urine are abnormal, provide a more detailed medical evaluation of the toxic effects of cadmium on the employee's renal system.

(6) *Examination for respirator use.* (i) To determine an employee's fitness for respirator use, the employer shall provide a medical examination that includes the elements specified in paragraph (l)(6)(i) (A)–(D) of this section. This examination shall be provided prior to the employee's being assigned to a job that requires the use of a respirator or no later than 90 days after this section goes into effect, whichever date is later, to any employee without a medical examination within the preceding 12 months that satisfies the requirements of this paragraph.

(A) A detailed medical and work history, or update thereof, with emphasis on: Past exposure to cadmium; smoking history and current status; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculoskeletal system dysfunction; a description of the job for which the respirator is required; and questions 3–11 and 25–32 in appendix D to this section;

(B) A blood pressure test;

(C) Biological monitoring of the employee's levels of CdU, CdB and β_2-M in accordance with the requirements of paragraph (l)(2)(ii)(B) of this section, unless such results already have been obtained within the previous 12 months; and

(D) Any other test or procedure that the examining physician deems appropriate.

(ii) After reviewing all the information obtained from the medical examination required in paragraph (l)(6)(i) of this section, the physician shall determine whether the employee is fit to wear a respirator.

(iii) Whenever an employee has exhibited difficulty in breathing during a respirator fit test or during use of a respirator, the employer, as soon as possible, shall provide the employee with a periodic medical examination in accordance with paragraph (l)(4)(ii) of this section to determine the employee's fitness to wear a respirator.

(iv) Where the results of the examination required under paragraph (l)(6)(i), (ii), or (iii) of this section are abnormal, medical limitation or prohibition of respirator use shall be considered. If the employee is allowed to wear a respirator, the employee's ability to continue to do so shall be periodically evaluated by a physician.

(7) *Emergency examinations.* (i) In addition to the medical surveillance required in paragraphs (l)(2)–(6) of this section, the employer shall provide a medical examination as soon as possible to any employee who may have been acutely exposed to cadmium because of an emergency.

(ii) The examination shall include the requirements of paragraph (l)(4)(ii) of this section, with emphasis on the respiratory system, other organ systems considered appropriate by the examining physician, and symptoms of acute overexposure, as identified in paragraphs II (B)(1)–(2) and IV of appendix A to this section.

(8) *Termination of employment examination.* (i) At termination of employment, the employer shall provide a medical examination in accordance with paragraph (l)(4)(ii) of this section, including a chest X-ray, to any employee to whom at any prior time the employer was required to provide medical surveillance under paragraphs (l)(1)(i) or (l)(7) of this section. However, if the last examination satisfied the requirements of paragraph (l)(4)(ii) of this section and was less than six months prior to the date of termination, no further examination is required unless otherwise specified in paragraphs (l)(3) or (l)(5) of this section;

(ii) However, for employees covered by paragraph (l)(1)(i)(B) of this section, if the employer has discontinued all periodic medical surveillance under paragraph (l)(4)(v) of this section, no termination of employment medical examination is required.

(9) *Information provided to the physician.* The employer shall provide the following information to the examining physician:

(i) A copy of this standard and appendices;

(ii) A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to cadmium;

(iii) The employee's former, current, and anticipated future levels of occupational exposure to cadmium;

(iv) A description of any personal protective equipment, including respirators, used or to be used by the employee, including when and for how long the employee has used that equipment; and

(v) relevant results of previous biological monitoring and medical examinations.

(10) *Physician's written medical opinion.* (i) The employer shall promptly obtain a written, signed medical opinion from the examining physician for each medical examination performed on each employee. This written opinion shall contain:

(A) The physician's diagnosis for the employee;

(B) The physician's opinion as to whether the employee has any detected medical condition(s) that would place the employee at increased risk of material impairment to health from further exposure to cadmium, including any indications of potential cadmium toxicity;

(C) The results of any biological or other testing or related evaluations that directly assess the employee's absorption of cadmium;

(D) Any recommended removal from, or limitation on the activities or duties of the employee or on the employee's use of personal protective equipment, such as respirators;

(E) A statement that the physician has clearly and carefully explained to the employee the results of the medical examination, including all biological monitoring results and any medical conditions related to cadmium exposure that require further evaluation or treatment, and any limitation on the employee's diet or use of medications.

(ii) The employer promptly shall obtain a copy of the results of any biological monitoring provided by an employer to an employee independently of a medical examination under paragraphs (l)(2) and (l)(4) of this section, and, in lieu of a written medical opinion, an explanation sheet explaining those results.

(iii) The employer shall instruct the physician not to reveal orally or in the written medical opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to cadmium.

(11) *Medical Removal Protection (MRP)*—(i) *General.* (A) The employer shall temporarily remove an employee from work where there is excess exposure to cadmium on each occasion that medical removal is required under paragraph (l)(3), (l)(4), or (l)(6) of this section and on each occasion that a physician determines in a written medical opinion that the employee should be removed from such exposure. The physician's determination may be based on biological monitoring results, inability to wear a respirator, evidence of illness, other signs or symptoms of cadmium-related dysfunction or disease, or any other reason deemed medically sufficient by the physician.

(B) The employer shall medically remove an employee in accordance with paragraph (l)(11) of this section regardless of whether at the time of removal a job is available into which the removed employee may be transferred.

(C) Whenever an employee is medically removed under paragraph (l)(11) of this section, the employer shall transfer the removed employee to a job where the exposure to cadmium is within the permissible levels specified in that paragraph as soon as one becomes available.

(D) For any employee who is medically removed under the provisions of paragraph (l)(11)(i) of this section, the employer shall provide follow-up biological monitoring in accordance with (l)(2)(ii)(B) of this section at least every three months and follow-up medical examinations semi-annually at least every six months until in a written medical opinion the examining physician determines that either the employee may be returned to his/her former job status as specified under paragraph (l)(11)(iv)–(v) of this section or the employee must be permanently removed from excess cadmium exposure.

(E) The employer may not return an employee who has been medically removed for any reason to his/her former job status until a physician determines in a written medical opinion that continued medical removal is no longer necessary to protect the employee's health.

(ii) Where an employee is found unfit to wear a respirator under paragraph (l)(6)(ii) of this section, the employer shall remove the employee from work where exposure to cadmium is above the PEL.

(iii) Where removal is based on any reason other than the employee's inability to wear a respirator, the employer shall remove the employee from work where exposure to cadmium is at or above the action level.

(iv) Except as specified in paragraph (l)(11)(v) of this section, no employee who was removed because his/her level of CdU, CdB and/or β_2-M exceeded the medical removal trigger levels in paragraph (l)(3) or (l)(4) of this section may be returned to work with exposure to cadmium at or above the action level until the employee's levels of CdU fall to or below 3 μg/g Cr, CdB falls to or below 5 μg/lwb, and β_2-M falls to or below 300 μg/g Cr.

(v) However, when in the examining physician's opinion continued exposure to cadmium will not pose an increased risk to the employee's health and there are special circumstances that make continued medical removal an inappropriate remedy, the physician shall fully discuss these matters with the employee, and then in a written determination may return a worker to his/her former job status despite what would otherwise be unacceptably high biological monitoring results. Thereafter, the returned employee shall continue to be provided with medical surveillance as if he/she were still on medical removal until the employee's levels of CdU fall to or below 3 μg/g Cr, CdB falls to or below 5 μg/lwb, and β_2-M falls to or below 300 μg/g Cr.

(vi) Where an employer, although not required by paragraph (l)(11)(i)–(iii) of this section to do so, removes an employee from exposure to cadmium or otherwise places limitations on an employee due to the effects of cadmium exposure on the employee's medical condition, the employer shall provide the same medical removal protection benefits to that employee under paragraph (l)(12) of this section as would have been provided had the removal been required under paragraph (l)(11)(i)–(iii) of this section.

(12) *Medical Removal Protection Benefits (MRPB).* (i) The employer shall provide MRPB for up to a maximum of 18 months to an employee each time and while the employee is temporarily medically removed under paragraph (l)(11) of this section.

(ii) For purposes of this section, the requirement that the employer provide MRPB means that the employer shall maintain the total normal earnings, seniority, and all other employee rights and benefits of the removed employee, including the employee's right to his/her former job status, as if the employee had not been removed from the employee's job or otherwise medically limited.

(iii) Where, after 18 months on medical removal because of elevated biological monitoring results, the employee's monitoring results have not declined to a low enough level to permit the employee to be returned to his/her former job status:

(A) The employer shall make available to the employee a medical examination pursuant to this section in order to obtain a final medical determination as to whether the employee may be returned to his/her former job status or must be permanently removed from excess cadmium exposure; and

(B) The employer shall assure that the final medical determination indicates whether the employee may be returned to his/her former job status and what

steps, if any, should be taken to protect the employee's health.

(iv) The employer may condition the provision of MRPB upon the employee's participation in medical surveillance provided in accordance with this section.

(13) *Multiple physician review.* (i) If the employer selects the initial physician to conduct any medical examination or consultation provided to an employee under this section, the employee may designate a second physician to:

(A) Review any findings, determinations, or recommendations of the initial physician; and

(B) Conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(ii) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician provided by the employer conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, multiple physician review upon the employee doing the following within fifteen (15) days after receipt of this notice, or receipt of the initial physician's written opinion, whichever is later:

(A) Informing the employer that he or she intends to seek a medical opinion; and

(B) Initiating steps to make an appointment with a second physician.

(iii) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

(iv) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee, through their respective physicians, shall designate a third physician to:

(A) Review any findings, determinations, or recommendations of the other two physicians; and

(B) Conduct such examinations, consultations, laboratory tests, and discussions with the other two physicians as the third physician deems necessary to resolve the disagreement among them.

(v) The employer shall act consistently with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement that is consistent with the recommendations of at least one of the other two physicians.

(14) *Alternate physician determination.* The employer and an employee or designated employee representative may agree upon the use of any alternate form of physician determination in lieu of the multiple physician review provided by paragraph (l)(13) of this section, so long as the alternative is expeditious and at least as protective of the employee.

(15) *Information the employer must provide the employee.* (i) The employer shall provide a copy of the physician's written medical opinion to the examined employee within two weeks after receipt thereof.

(ii) The employer shall provide the employee with a copy of the employee's biological monitoring results and an explanation sheet explaining the results within two weeks after receipt thereof.

(iii) Within 30 days after a request by an employee, the employer shall provide the employee with the information the employer is required to provide the examining physician under paragraph (l)(9) of this section.

(16) *Reporting.* In addition to other medical events that are required to be reported on the OSHA Form No. 200, the employer shall report any abnormal condition or disorder caused by occupational exposure to cadmium associated with employment as specified in Chapter (V)(E) of the Reporting Guidelines for Occupational Injuries and Illnesses.

(m) *Communication of cadmium hazards to employees*—(1) *General.* In communications concerning cadmium hazards, employers shall comply with the requirements of OSHA's Hazard Communication Standard, 29 CFR 1910.1200, including but not limited to the requirements concerning warning signs and labels, material safety data sheets (MSDS), and employee information and training. In addition, employers shall comply with the following requirements:

(2) *Warning signs.* (i) Warning signs shall be provided and displayed in regulated areas. In addition, warning signs shall be posted at all approaches to regulated areas so that an employee may read the signs and take necessary protective steps before entering the area.

(ii) Warning signs required by paragraph (m)(2)(i) of this section shall bear the following information:

DANGER
CADMIUM
CANCER HAZARD
CAN CAUSE LUNG AND KIDNEY DISEASE
AUTHORIZED PERSONNEL ONLY
RESPIRATORS REQUIRED IN THIS AREA

(iii) The employer shall assure that signs required by this paragraph are illuminated, cleaned, and maintained as necessary so that the legend is readily visible.

(3) *Warning labels.* (i) Shipping and storage containers containing cadmium, cadmium compounds, or cadmium contaminated clothing, equipment, waste, scrap, or debris shall bear appropriate warning labels, as specified in paragraph (m)(3)(ii) of this section.

(ii) The warning labels shall include at least the following information:

DANGER
CONTAINS CADMIUM
CANCER HAZARD
AVOID CREATING DUST
CAN CAUSE LUNG AND KIDNEY DISEASE

(iii) Where feasible, installed cadmium products shall have a visible label or other indication that cadmium is present.

(4) *Employee information and training.* (i) The employer shall institute a training program for all employees who are potentially exposed to cadmium, assure employee participation in the program, and maintain a record of the contents of such program.

(ii) Training shall be provided prior to or at the time of initial assignment to a job involving potential exposure to cadmium and at least annually thereafter.

(iii) The employer shall make the training program understandable to the employee and shall assure that each employee is informed of the following:

(A) The health hazards associated with cadmium exposure, with special attention to the information incorporated in appendix A to this section;

(B) The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposures above the PEL;

(C) The engineering controls and work practices associated with the employee's job assignment;

(D) The measures employees can take to protect themselves from exposure to cadmium, including modification of such habits as smoking and personal hygiene, and specific procedures the employer has implemented to protect employees from exposure to cadmium such as appropriate work practices, emergency procedures, and the provision of personal protective equipment;

(E) The purpose, proper selection, fitting, proper use, and limitations of respirators and protective clothing;

(F) The purpose and a description of the medical surveillance program required by paragraph (l) of this section;

(G) The contents of this section and its appendices; and

(H) The employee's rights of access to records under § 1915.1120 (e) and (g).

(iv) Additional access to information and training program and materials.

(A) The employer shall make a copy of this section and its appendices readily available without cost to all affected employees and shall provide a copy if requested.

(B) The employer shall provide to the Assistant Secretary or the Director, upon request, all materials relating to the employee information and the training program.

(n) *Recordkeeping*—(1) *Exposure monitoring.* (i) The employer shall establish and keep an accurate record of all air monitoring for cadmium in the workplace.

(ii) This record shall include at least the following information:

(A) The monitoring date, duration, and results in terms of an 8-hour TWA of each sample taken;

(B) The name, social security number, and job classification of the employees monitored and of all other employees whose exposures the monitoring is intended to represent;

(C) A description of the sampling and analytical methods used and evidence of their accuracy;

(D) The type of respiratory protective device, if any, worn by the monitored employee;

(E) A notation of any other conditions that might have affected the monitoring results.

(iii) The employer shall maintain this record for at least thirty (30) years, in accordance with § 1915.1120 of this part.

(2) *Objective data for exemption from requirement for initial monitoring.* (i) For purposes of this section, objective data are information demonstrating that a particular product or material containing cadmium or a specific process, operation, or activity involving cadmium cannot release dust or fumes in concentrations at or above the action level even under the worst-case release conditions. Objective data can be obtained from an industry-wide study or from laboratory product test results from manufacturers of cadmium-containing products or materials. The data the employer uses from an industry-wide survey must be obtained under workplace conditions closely resembling the processes, types of material, control methods, work practices and environmental conditions in the employer's current operations.

(ii) The employer shall establish and maintain a record of the objective data for at least 30 years.

(3) *Medical surveillance.* (i) The employer shall establish and maintain an accurate record for each employee covered by medical surveillance under paragraph (l)(1)(i) of this section.

(ii) The record shall include at least the following information about the employee:

(A) Name, social security number, and description of the duties;

(B) A copy of the physician's written opinions and an explanation sheet for biological monitoring results;

(C) A copy of the medical history, and the results of any physical examination and all test results that are required to be provided by this section, including biological tests, X-rays, pulmonary function tests, etc., or that have been obtained to further evaluate any condition that might be related to cadmium exposure;

(D) The employee's medical symptoms that might be related to exposure to cadmium; and

(E) A copy of the information provided to the physician as required by paragraph (l)(9)(ii)–(v) of this section.

(iii) The employer shall assure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with § 1915.1120 of this part.

(4) *Training.* The employer shall certify that employees have been trained by preparing a certification record which includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date the training was completed. The certification records shall be prepared at the completion of training and shall be maintained on file for one (1) year beyond the date of training of that employee.

(5) *Availability.* (i) Except as otherwise provided for in this section, access to all records required to be maintained by paragraphs (n)(1)–(4) of this section shall be in accordance with the provisions of § 1915.1120 of this part.

(ii) Within 15 days after a request, the employer shall make an employee's medical records required to be kept by paragraph (n)(3) of this section available for examination and copying to the subject employee, to designated representatives, to anyone having the specific written consent of the subject employee, and after the employee's death or incapacitation, to the employee's family members.

(6) *Transfer of records.* Whenever an employer ceases to do business and there is no successor employer to receive and retain records for the prescribed period or the employer intends to dispose of any records required to be preserved for at least 30 years, the employer shall comply with the requirements concerning transfer of records set forth in § 1915.1120(h) of this part.

(o) *Observation of monitoring*—(1) *Employee observation.* The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to cadmium.

(2) *Observation procedures.* When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with that clothing and equipment and shall assure that the observer uses such clothing and equipment and complies with all other applicable safety and health procedures.

(p) *Dates*—(1) *Effective date.* This section shall become effective December 14, 1992.

(2) *Start-up dates.* All obligations of this section commence on the effective date except as follows:

(i) *Exposure monitoring.* Except for small businesses (nineteen (19) or fewer employees), initial monitoring required by paragraph (d)(2) of this section shall be completed as soon as possible and in any event no later than February 12, 1993. For small businesses, initial monitoring required by paragraph (d)(2) of this section shall be completed as soon as possible and in any event no later than April 14, 1993.

(ii) *Regulated areas.* Except for small business, defined under paragraph (p)(2)(i) of this section, regulated areas required to be established by paragraph (e) of this section shall be set up as soon as possible after the results of exposure monitoring are known and in any event no later than March 15, 1993. For small businesses, regulated areas required to be established by paragraph (e) of this section shall be set up as soon as possible after the results of exposure monitoring are known and in any event no later than May 14, 1993.

(iii) *Respiratory protection.* Except for small businesses, defined under paragraph (p)(2)(i) of this section, respiratory protection required by paragraph (g) of this section shall be provided as soon as possible and in any event no later than 90 days after the effective date of this section. For small businesses, respiratory protection required by paragraph (g) of this section shall be provided as soon as possible and in any event no later than March 15, 1993.

(iv) *Compliance program.* Written compliance programs required by paragraph (f)(2) of this section shall be completed and available for inspection and copying as soon as possible and in any event no later than December 14, 1993.

(v) *Methods of compliance.* The engineering controls required by paragraph (f)(1) of this section shall be implemented as soon as possible and in any event no later than December 14, 1994. Work practice controls shall be implemented as soon as possible. Work practice controls that are directly related to engineering controls to be implemented in accordance with the compliance plan shall be implemented as soon as possible after such engineering controls are implemented.

(vi) *Hygiene and lunchroom facilities.* (A) Handwashing facilities, permanent or temporary, shall be provided in accordance with 29 CFR 1910.141 (d)(1) and (2) as soon as possible and in any event no later than February 12, 1993.

(B) Change rooms, showers, and lunchroom facilities shall be completed as soon as possible and in any event no later than December 14, 1993.

(vii) *Employee information and training.* Except for small businesses, defined under paragraph (p)(2)(i) of this section, employee information and training required by paragraph (m)(4) of this section shall be provided as soon as possible and in any event no later than March 15, 1993. For small businesses, employee information and training required by paragraph (m)(4) of this standard shall be provided as soon as possible and in any event no later than June 14, 1993.

(viii) *Medical surveillance.* Except for small businesses, defined under paragraph (p)(2)(i) of this section, initial medical examinations required by paragraph (l) of this section shall be provided as soon as possible and in any event no later than March 15, 1993. For small businesses, initial medical examinations required by paragraph (l) of this section shall be provided as soon as possible and in any event no later than June 14, 1993.

(q) *Appendices.* (1) Appendix C to this section is incorporated as part of this section, and compliance with its contents is mandatory.

(2) Except where portions of appendices A, B, D, E, and F to this section are expressly incorporated in requirements of this section, these appendices are purely informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

Appendix A to § 1915.1027—Substance Safety Data Sheet

Cadmium

I. Substance Identification

A. Substance: Cadmium.

B. 8-Hour, Time-weighted-average, Permissible Exposure Limit (TWA PEL):

1. TWA PEL: Five micrograms of cadmium per cubic meter of air 5 $\mu g/m^3$, time-weighted average (TWA) for an 8-hour workday.

C. Appearance: Cadmium metal—soft, blue-white, malleable, lustrous metal or grayish-white powder. Some cadmium compounds may also appear as a brown, yellow, or red powdery substance.

II. Health Hazard Data

A. Routes of Exposure. Cadmium can cause local skin or eye irritation. Cadmium can affect your health if you inhale it or if you swallow it.

B. Effects of Overexposure.

1. Short-term (acute) exposure: Cadmium is much more dangerous by inhalation than by ingestion. High exposures to cadmium that may be immediately dangerous to life or health occur in jobs where workers handle large quantities of cadmium dust or fume; heat cadmium-containing compounds or cadmium-coated surfaces; weld with cadmium solders or cut cadmium-containing materials such as bolts.

2. Severe exposure may occur before symptoms appear. Early symptoms may include mild irritation of the upper respiratory tract, a sensation of constriction of the throat, a metallic taste and/or a cough. A period of 1–10 hours may precede the onset of rapidly progressing shortness of breath, chest pain, and flu-like symptoms with weakness, fever, headache, chills, sweating and muscular pain. Acute pulmonary edema usually develops within 24 hours and reaches a maximum by three days. If death from asphyxia does not occur, symptoms may resolve within a week.

3. Long-term (chronic) exposure. Repeated or long-term exposure to cadmium, even at relatively low concentrations, may result in kidney damage and an increased risk of cancer of the lung and of the prostate.

C. Emergency First Aid Procedures.

1. Eye exposure: Direct contact may cause redness or pain. Wash eyes immediately with large amounts of water, lifting the upper and lower eyelids. Get medical attention immediately.

2. Skin exposure: Direct contact may result in irritation. Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water. Get medical attention immediately.

3. Ingestion: Ingestion may result in vomiting, abdominal pain, nausea, diarrhea, headache and sore throat. Treatment for symptoms must be administered by medical personnel. Under no circumstances should the employer allow any person whom he retains, employs, supervises or controls to engage in therapeutic chelation. Such treatment is likely to translocate cadmium from pulmonary or other tissue to renal tissue. Get medical attention immediately.

4. Inhalation: If large amounts of cadmium are inhaled, the exposed person must be moved to fresh air at once. If breathing has stopped, perform cardiopulmonary resuscitation. Administer oxygen if available. Keep the affected person warm and at rest. Get medical attention immediately.

5. Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. Do not become a casualty yourself. Understand your emergency rescue procedures and know the location of the emergency equipment before the need arises.

III. Employee Information

A. Protective Clothing and Equipment.

1. Respirators: You may be required to wear a respirator for non-routine activities; in emergencies; while your employer is in the process of reducing cadmium exposures through engineering controls; and where engineering controls are not feasible. If respirators are worn in the future, they must have a joint Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH) label of approval. Cadmium does not have a detectable odor except at levels well above the permissible exposure limits. If you can smell cadmium while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.

2. Protective Clothing: You may be required to wear impermeable clothing, gloves, foot gear, a face shield, or other appropriate protective clothing to prevent skin contact with cadmium. Where protective clothing is required, your employer must provide clean garments to you as necessary to assure that the clothing protects you adequately. The employer must replace or repair protective clothing that has become torn or otherwise damaged.

3. Eye Protection: You may be required to wear splash-proof or dust resistant goggles to prevent eye contact with cadmium.

B. Employer Requirements.

1. Medical: If you are exposed to cadmium at or above the action level, your employer is required to provide a medical examination, laboratory tests and a medical history according to the medical surveillance provisions under paragraph (1) of this standard. (See summary chart and tables in this appendix A.) These tests shall be provided without cost to you. In addition, if you are accidentally exposed to cadmium under conditions known or suspected to constitute toxic exposure to cadmium, your employer is required to make special tests available to you.

2. Access to Records: All medical records are kept strictly confidential. You or your representative are entitled to see the records of measurements of your exposure to cadmium. Your medical examination records can be furnished to your personal physician or designated representative upon request by you to your employer.

3. Observation of Monitoring: Your employer is required to perform measurements that are representative of your exposure to cadmium and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear the protective clothing and equipment.

C. Employee Requirements.—You will not be able to smoke, eat, drink, chew gum or tobacco, or apply cosmetics while working with cadmium in regulated areas. You will also not be able to carry or store tobacco products, gum, food, drinks or cosmetics in regulated areas because these products easily become contaminated with cadmium from the workplace and can therefore create another source of unnecessary cadmium exposure.

Some workers will have to change out of work clothes and shower at the end of the day, as part of their workday, in order to wash cadmium from skin and hair. Handwashing and cadmium-free eating facilities shall be provided by the employer and proper hygiene should always be performed before eating. It is also recommended that you do not smoke or use tobacco products, because among other things, they naturally contain cadmium. For further information, read the labeling on such products.

IV Physician Information

A. Introduction.—The medical surveillance provisions of paragraph (1) generally are aimed at accomplishing three main interrelated purposes: First, identifying employees at higher risk of adverse health effects from excess, chronic exposure to cadmium; second, preventing cadmium-induced disease; and third, detecting and minimizing existing cadmium-induced disease. The core of medical surveillance in this standard is the early and periodic monitoring of the employee's biological indicators of: (a) Recent exposure to cadmium; (b) cadmium body burden; and (c) potential and actual kidney damage associated with exposure to cadmium.

The main adverse health effects associated with cadmium overexposure are lung cancer and kidney dysfunction. It is not yet known how to adequately biologically monitor human beings to specifically prevent cadmium-induced lung cancer. By contrast, the kidney can be monitored to provide prevention and early detection of cadmium-induced kidney damage. Since, for non-carcinogenic effects, the kidney is considered the primary target organ of chronic exposure to cadmium, the medical surveillance provisions of this standard effectively focus on cadmium-induced kidney disease. Within that focus, the aim, where possible, is to prevent the onset of such disease and, where necessary, to minimize such disease as may already exist. The by-products of successful prevention of kidney disease are anticipated to be the reduction and prevention of other cadmium-induced diseases.

B. Health Effects.—The major health effects associated with cadmium overexposure are described below.

1. Kidney: The most prevalent non-malignant disease observed among workers chronically exposed to cadmium is kidney dysfunction. Initially, such dysfunction is manifested as proteinuria. The proteinuria associated with cadmium exposure is most commonly characterized by excretion of low-molecular weight proteins (15,000 to 40,000 MW) accompanied by loss of electrolytes, uric acid, calcium, amino acids, and phosphate. The compounds commonly excreted include: beta-2-microglobulin (β_2-M), retinol binding protein (RBP), immunoglobulin light chains, and lysozyme. Excretion of low molecular weight proteins are characteristic of damage to the proximal tubules of the kidney (Iwao *et al.*, 1980).

It has also been observed that exposure to cadmium may lead to urinary excretion of high-molecular weight proteins such as albumin, immunoglobulin G, and glycoproteins (Ex. 29). Excretion of high-molecular weight proteins is typically indicative of damage to the glomeruli of the kidney. Bernard *et al.*, (1979) suggest that damage to the glomeruli and damage to the proximal tubules of the kidney may both be linked to cadmium exposure but they may occur independently of each other.

Several studies indicate that the onset of low-molecular weight proteinuria is a sign of irreversible kidney damage (Friberg *et al.*, 1974; Roels *et al.*, 1982; Piscator 1984; Elinder *et al.*, 1985; Smith *et al.*, 1986). Above specific levels of β_2-M associated with cadmium exposure it is unlikely that β_2-M levels return to normal even when cadmium exposure is eliminated by removal of the individual from the cadmium work environment (Friberg, Ex. 29, 1990).

Some studies indicate that such proteinuria may be progressive; levels of β_2-M observed in the urine increase with time even after cadmium exposure has ceased. See, for example, Elinder *et al.*, 1985. Such observations, however, are not universal, and it has been suggested that studies in which proteinuria has not been observed to progress may not have tracked patients for a sufficiently long time interval (Jarup, Ex. 8–661).

When cadmium exposure continues after the onset of proteinuria, chronic nephrotoxicity may occur (Friberg, Ex. 29). Uremia results from the inability of the glomerulus to adequately filter blood. This leads to severe disturbance of electrolyte concentrations and may lead to various clinical complications including kidney stones (L–140–50).

After prolonged exposure to cadmium, glomerular proteinuria, glucosuria, aminoaciduria, phosphaturia, and hypercalciuria may develop (Exs. 8–86, 4–28, 14–18). Phosphate, calcium, glucose, and amino acids are essential to life, and under normal conditions, their excretion should be regulated by the kidney. Once low molecular weight proteinuria has developed, these elements dissipate from the human body. Loss of glomerular function may also occur, manifested by decreased glomerular filtration rate and increased serum creatinine. Severe cadmium-induced renal damage may eventually develop into chronic renal failure and uremia (Ex. 55).

Studies in which animals are chronically exposed to cadmium confirm the renal effects observed in humans (Friberg *et al.*, 1986). Animal studies also confirm problems with calcium metabolism and related skeletal effects which have been observed among humans exposed to cadmium in addition to the renal effects. Other effects commonly reported in chronic animal studies include anemia, changes in liver morphology, immunosuppression and hypertension. Some of these effects may be associated with co-factors. Hypertension, for example, appears to be associated with diet as well as cadmium exposure. Animals injected with cadmium have also shown testicular necrosis (Ex. 8–86B).

2. Biological Markers

It is universally recognized that the best measures of cadmium exposures and its effects are measurements of cadmium in biological fluids, especially urine and blood. Of the two, CdU is conventionally used to determine body burden of cadmium in workers without kidney disease. CdB is conventionally used to monitor for recent exposure to cadmium. In addition, levels of CdU and CdB historically have been used to predict the percent of the population likely to develop kidney disease (Thun *et al.*, Ex. L–140–50; WHO, Ex. 8–674; ACGIH, Exs. 8–667, 140–50).

The third biological parameter upon which OSHA relies for medical surveillance is Beta-2-microglobulin in urine (β_2-M), a low molecular weight protein. Excess β_2-M has been widely accepted by physicians and scientists as a reliable indicator of functional damage to the proximal tubule of the kidney (Exs. 8–447, 144–3–C, 4–47, L–140–45, 19–43–A).

Excess β_2-M is found when the proximal tubules can no longer reabsorb this protein in a normal manner. This failure of the proximal tubules is an early stage of a kind of kidney disease that commonly occurs among workers with excessive cadmium exposure. Used in conjunction with biological test results indicating abnormal levels of CdU and CdB, the finding of excess β_2-M can establish for an examining physician that any existing kidney disease is probably cadmium-related (Trs. 6/6/90, pp. 82–86, 122, 134). The upper limits of normal levels for cadmium in urine and cadmium in blood are 3 μg Cd/gram creatinine in urine and 5 μgCd/liter whole blood, respectively. These levels were derived from broad-based population studies.

Three issues confront the physicians in the use of β_2-M as a marker of kidney dysfunction and material impairment. First, there are a few other causes of elevated levels of β_2-M not related to cadmium exposures, some of which may be rather common diseases and some of which are serious diseases (e.g., myeloma or transient flu, Exs. 29 and 8–086). These can be medically evaluated as alternative causes (Friberg, Ex. 29). Also, there are other factors that can cause β_2-M to degrade so that low levels

would result in workers with tubular dysfunction. For example, regarding the degradation of β_2-M, workers with acidic urine (pH<6) might have β_2-M levels that are within the "normal" range when in fact kidney dysfunction has occurred (Ex. L–140–1) and the low molecular weight proteins are degraded in acid urine. Thus, it is very important that the pH of urine be measured, that urine samples be buffered as necessary (See appendix F.), and that urine samples be handled correctly, i.e., measure the pH of freshly voided urine samples, then if necessary, buffer to pH>6 (or above for shipping purposes), measure pH again and then, perhaps, freeze the sample for storage and shipping. (See also appendix F.) Second, there is debate over the pathological significance of proteinuria, however, most world experts believe that β_2-M levels greater than 300 µg/g Cr are abnormal (Elinder, Ex. 55, Friberg, Ex. 29). Such levels signify kidney dysfunction that constitutes material impairment of health. Finally, detection of β_2-M at low levels has often been considered difficult, however, many laboratories have the capability of detecting excess β_2-M using simple kits, such as the Phadebas Delphia test, that are accurate to levels of 100 µg β_2-M/g Cr U (Ex. L–140–1).

Specific recommendations for ways to measure β_2-M and proper handling of urine samples to prevent degradation of β_2-M have been addressed by OSHA in appendix F, in the section on laboratory standardization. All biological samples must be analyzed in a laboratory that is proficient in the analysis of that particular analyte, under paragraph (l)(1)(iv). (See appendix F). Specifically, under paragraph (l)(1)(iv), the employer is to assure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (β_2-M) taken from employees is collected in a manner that assures reliability The employer must also assure that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (β_2-M) taken from employees is performed in laboratories with demonstrated proficiency for that particular analyte. (See appendix F.)

3. Lung and Prostate Cancer

The primary sites for cadmium-associated cancer appear to be the lung and the prostate (L–140–50). Evidence for an association between cancer and cadmium exposure derives from both epidemiological studies and animal experiments. Mortality from prostate cancer associated with cadmium is slightly elevated in several industrial cohorts, but the number of cases is small and there is not clear dose-response relationship. More substantive evidence exists for lung cancer.

The major epidemiological study of lung cancer was conducted by Thun *et al.*, (Ex. 4–68). Adequate data on cadmium exposures were available to allow evaluation of dose-response relationships between cadmium exposure and lung cancer. A statistically significant excess of lung cancer attributed to cadmium exposure was observed in this study even when confounding variables such as co-exposure to arsenic and smoking habits were taken into consideration (Ex. L–140–50).

The primary evidence for quantifying a link between lung cancer and cadmium exposure from animal studies derives from two rat bioassay studies; one by Takenaka *et al.*, (1983), which is a study of cadmium chloride and a second study by Oldiges and Glaser (1990) of four cadmium compounds.

Based on the above cited studies, the U.S. Environmental Protection Agency (EPA) classified cadmium as "B1", a probable human carcinogen, in 1985 (Ex. 4–4). The International Agency for Research on Cancer (IARC) in 1987 also recommended that cadmium be listed as "2A", a probable human carcinogen (Ex. 4–15). The American Conference of Governmental Industrial Hygienists (ACGIH) has recently recommended that cadmium be labeled as a carcinogen. Since 1984, NIOSH has concluded that cadmium is possibly a human carcinogen and has recommended that exposures be controlled to the lowest level feasible.

4. Non-carcinogenic Effects

Acute pneumonitis occurs 10 to 24 hours after initial acute inhalation of high levels of cadmium fumes with symptoms such as fever and chest pain (Exs. 30, 8–86B). In extreme exposure cases pulmonary edema may develop and cause death several days after exposure. Little actual exposure measurement data is available on the level of airborne cadmium exposure that causes such immediate adverse lung effects, nonetheless, it is reasonable to believe a cadmium concentration of approximately 1 mg/m^3 over an eight hour period is "immediately dangerous" (55 FR 4052, ANSI; Ex. 8–86B).

In addition to acute lung effects and chronic renal effects, long term exposure to cadmium may cause other severe effects on the respiratory system. Reduced pulmonary function and chronic lung disease indicative of emphysema have been observed in workers who have had prolonged exposure to cadmium dust or fumes (Exs. 4–29, 4–22, 4–42, 4–50, 4–63). In a study of workers conducted by Kazantzis *et al.*, a statistically significant excess of worker deaths due to chronic bronchitis was found, which in his opinion was directly related to high cadmium exposures of 1 mg/m^3 or more (Tr 6/8/90, pp. 156–157).

Cadmium need not be respirable to constitute a hazard. Inspirable cadmium particles that are too large to be respirable but small enough to enter the tracheobronchial region of the lung can lead to bronchoconstriction, chronic pulmonary disease, and cancer of that portion of the lung. All of these diseases have been associated with occupational exposure to cadmium (Ex. 8–86B). Particles that are constrained by their size to the extra-thoracic regions of the respiratory system such as the nose and maxillary sinuses can be swallowed through mucocillary clearance and be absorbed into the body (ACGIH, Ex. 8–692). The impaction of these particles in the upper airways can lead to anosmia, or loss of sense of smell, which is an early indication of overexposure among workers exposed to heavy metals. This condition is commonly reported among cadmium-exposed workers (Ex. 8–86–B).

C. Medical Surveillance

In general, the main provisions of the medical surveillance section of the standard, under paragraphs (l)(1)–(17) of the regulatory text, are as follows:

1. Workers exposed above the action level are covered;

2. Workers with intermittent exposures are not covered;

3. Past workers who are covered receive biological monitoring for at least one year;

4. Initial examinations include a medical questionnaire and biological monitoring of cadmium in blood (CdB), cadmium in urine (CdU), and Beta-2-microglobulin in urine (β_2-M);

5. Biological monitoring of these three analytes is performed at least annually; full medical examinations are performed biennially;

6. Until five years from the effective date of the standard, medical removal is required when CdU is greater than 15 µg/gram creatinine (g Cr), or CdB is greater than 15 µg/liter whole blood (lwb), or β_2-M is greater than 1500 µg/g Cr, and CdB is greater than 5 µg/lwb or CdU is greater than 3 µg/g Cr;

7. Beginning five years after the standard is in effect, medical removal triggers will be reduced;

8. Medical removal protection benefits are to be provided for up to 18 months;

9. Limited initial medical examinations are required for respirator usage;

10. Major provisions are fully described under section (l) of the regulatory text; they are outlined here as follows:

A. Eligibility
B. Biological monitoring
C. Actions triggered by levels of CdU, CdB, and β_2-M (See Summary Charts and Tables in Attachment-1.)
D. Periodic medical surveillance
E. Actions triggered by periodic medical surveillance (See appendix A Summary Chart and Tables in Attachment-1)
F Respirator usage
G. Emergency medical examinations
H. Termination examination
I. Information to physician
J. Physician's medical opinion
K. Medical removal protection
L. Medical removal protection benefits
M. Multiple physician review
N. Alternate physician review
O. Information employer gives to employee
P. Recordkeeping
Q. Reporting on OSHA form 200

11. The above mentioned summary of the medical surveillance provisions, the summary chart, and tables for the actions triggered at different levels of CdU, CdB and β_2-M (in appendix A Attachment-1) are included only for the purpose of facilitating understanding of the provisions of paragraphs (l)(3) of the final cadmium standard. The summary of the provisions, the summary chart, and the tables do not add to or reduce the requirements in paragraph (l)(3).

D. Recommendations to Physicians

1. It is strongly recommended that patients with tubular proteinuria are counseled on. The hazards of smoking; avoidance of nephrotoxins and certain prescriptions and

over-the-counter medications that may exacerbate kidney symptoms; how to control diabetes and/or blood pressure; proper hydration, diet, and exercise (Ex. 19–2). A list of prominent or common nephrotoxins is attached. (See appendix A Attachment-2.)

2. DO NOT CHELATE; KNOW WHICH DRUGS ARE NEPHROTOXINS OR ARE ASSOCIATED WITH NEPHRITIS.

3. The gravity of cadmium-induced renal damage is compounded by the fact there is no medical treatment to prevent or reduce the accumulation of cadmium in the kidney (Ex. 8–619). Dr. Friberg, a leading world expert on cadmium toxicity, indicated in 1992, that there is no form of chelating agent that could be used without substantial risk. He stated that tubular proteinuria has to be treated in the same way as other kidney disorders (Ex. 29).

4. After the results of a workers' biological monitoring or medical examination are received the employer is required to provide an information sheet to the patient, briefly explaining the significance of the results. (See Attachment 3 of this appendix A.)

5. For additional information the physician is referred to the following additional resources:

a. The physician can always obtain a copy of the preamble, with its full discussion of the health effects, from OSHA's Computerized Information System (OCIS).

b. The Docket Officer maintains a record of the rulemaking. The Cadmium Docket (H–057A), is located at 200 Constitution Ave. NW., room N–2625, Washington, DC 20210; telephone: 202–219–7894.

c. The following articles and exhibits in particular from that docket (H–057A):

Exhibit No.	Author and paper title
8–447	Lauwerys *et. al.*, Guide for physicians, "Health Maintenance of Workers Exposed to Cadmium," published by the Cadmium Council.
4–67	Takenaka, S., H. Oldiges, H. Konig, D. Hochrainer, G. Oberdorster. "Carcinogenicity of Cadmium Chloride Aerosols in Wistar Rats". *JNCI* 70:367–373, 1983. (32)
4–68	Thun, M.J., T.M. Schnoor, A.B. Smith, W.E. Halperin, R.A. Lemen. "Mortality Among a Cohort of U.S. Cadmium Production Workers—An Update." *JNCI* 74(2):325–33, 1985. (8)
4–25	Elinder, C.G., Kjellstrom, T., Hogstedt, C., *et al.*, "Cancer Mortality of Cadmium Workers." *Brit. J. Ind. Med.* 42:651–655, 1985. (14)
4–26	Ellis, K.J. *et al.*, "Critical Concentrations of Cadmium in Human Renal Cortex: Dose Effect Studies to Cadmium Smelter Workers." *J. Toxicol. Environ. Health* 7:691–703, 1981. (76)
4–27	Ellis, K.J., S.H. Cohn and T.J. Smith. "Cadmium Inhalation Exposure Estimates: Their Significance with Respect to Kidney and Liver Cadmium Burden." *J. Toxicol. Environ. Health* 15:173–187, 1985.
4–28	Falck, F.Y., Jr., Fine, L.J., Smith, R.G., McClatchey, K.D., Annesley, T., England, B., and Schork, A.M. "Occupational Cadmium Exposure and Renal Status." *Am. J. Ind. Med.* 4:541, 1983. (64)
8–86A	Friberg, L., C.G. Elinder, *et al.*, "Cadmium and Health a Toxicological and Epidemiological Appraisal, Volume I, Exposure, Dose, and Metabolism." CRC Press, Inc., Boca Raton, FL, 1986. (Available from the OSHA Technical Data Center)
8–86B	Friberg, L., C.G. Elinder, *et al.*, "Cadmium and Health: A Toxicological and Epidemiological Appraisal, Volume II, Effects and Response." CRC Press, Inc., Boca Raton, FL, 1986. (Available from the OSHA Technical Data Center)
L–140–45 .	Elinder, C.G., "Cancer Mortality of Cadmium Workers", *Brit. J. Ind. Med.*, 42, 651–655, 1985.
L–140–50 .	Thun, M., Elinder, C.G., Friberg, L, "Scientific Basis for an Occupational Standard for Cadmium, *Am. J. Ind. Med.*, 20; 629–642, 1991.

V. Information Sheet

The information sheet (appendix A Attachment-3.) or an equally explanatory one should be provided to you after any biological monitoring results are reviewed by the physician, or where applicable, after any medical examination.

Appendix A

Attachment 1—Appendix A Summary Chart and Tables A and B of Actions Triggered by Biological Monitoring

Appendix A Summary Chart: Section (1)(3) Medical Surveillance

Categorizing Biological Monitoring Results

(A) Biological monitoring results categories are set forth in Appendix A Table A for the periods ending December 31, 1998 and for the period beginning January 1, 1999.

(B) The results of the biological monitoring for the initial medical exam and the subsequent exams shall determine an employee's biological monitoring result category.

Actions Triggered by Biological Monitoring

(A)

(i) The actions triggered by biological monitoring for an employee are set forth in Appendix A Table B.

(ii) The biological monitoring results for each employee under section (1)(3) shall determine the actions required for that employee. That is, for any employee in biological monitoring category C, the employer will perform all of the actions for which there is an X in column C of Appendix A Table B.

(iii) An employee is assigned the alphabetical category ("A" being the lowest) depending upon the test results of the three biological markers.

(iv) An employee is assigned category A if monitoring results for all three biological markers fall at or below the levels indicated in the table listed for category A.

(v) An employee is assigned category B if any monitoring result for any of the three biological markers fall within the range of levels indicated in the table listed for category B, providing no result exceeds the levels listed for category B.

(vi) An employee is assigned category C if any monitoring result for any of the three biological markers are above the levels listed for category C.

(B) The user of Appendix A Tables A and B should know that these tables are provided only to facilitate understanding of the relevant provisions of paragraph (l)(3) of this section. Appendix A Tables A and B are not meant to add to or subtract from the requirements of those provisions.

Appendix A Table A

Categorization of Biological Monitoring Results

APPLICABLE THROUGH 1998 ONLY

Biological marker	Monitoring result categories		
	A	B	C
Cadmium in urine (CdU) (μg/g creatinine)	≤3	>3 and ≤15	>15
β_2-microglobulin (β_2–M) (μg/g creatinine)	≤300	>300 and ≤1500	>1500*
Cadmium in blood (CdB) (μg/liter whole blood)	≤5	>5 and ≤15	>15

* If an employee's β_2–M levels are above 1,500 μg/g creatinine, in order for mandatory medical removal to be required (See Appendix A Table B.), either the employee's CdU level must also be >3 μg/g creatinine or CdB level must also be >5 μg/liter whole blood.

APPLICABLE BEGINNING JANUARY 1, 1999

Biological marker	Monitoring result categories		
	A	B	C
Cadmium in urine (CdU) (µg/g creatinine)	≤3	>3 and ≤7	>7
β_2-microglobulin (β_2–M) (µg/g creatinine)	≤300	>300 and ≤750	>750*
Cadmium in blood (CdB) (µg/liter whole blood)	≤5	>5 and ≤10	>10

* If an employee's β_2–M levels are above 750 µg/g creatinine, in order for mandatory medical removal to be required (See Appendix A Table B.), either the employee's CdU level must also be >3 µg/g creatinine or CdB level must also be >5 µg/liter whole blood.

Appendix A Table B—Actions Determined by Biological Monitoring

This table presents the actions required based on the monitoring result in Appendix A Table A. Each item is a separate requirement in citing non-compliance. For example, a medical examination within 90 days for an employee in category B is separate from the requirement to administer a periodic medical examination for category B employees on an annual basis.

Required actions	Monitoring result category		
	A[1]	B[1]	C[1]
(1) Biological monitoring:			
(a) Annual.	X		
(b) Semiannual		X	
(c) Quarterly			X
(2) Medical examination:			
(a) Biennial	X		
(b) Annual.		X	
(c) Semiannual.			X
(d) Within 90 days		X	X
(3) Assess within two weeks:			
(a) Excess cadmium exposure		X	X
(b) Work practices		X	X
(c) Personal hygiene		X	X
(d) Respirator usage		X	X
(e) Smoking history		X	X
(f) Hygiene facilities		X	X
(g) Engineering controls		X	X
(h) Correct within 30 days		X	X
(i) Periodically assess exposures			X
(4) Discretionary medical removal		X	X
(5) Mandatory medical removal			X[2]

[1] For all employees covered by medical surveillance exclusively because of exposures prior to the effective date of this standard, if they are in Category A, the employer shall follow the requirements of paragraphs (l)(3)(i)(B) and (l)(4)(v)(A). If they are in Category B or C, the employer shall follow the requirements of paragraphs (l)(4)(v)(B)–(C).

[2] See footnote Appendix A Table A.

Appendix A—Attachment–2: List of Medications

A list of the more common medications that a physician, and the employee, may wish to review is likely to include some of the following: (1) Anticonvulsants: Paramethadione, phenytoin, trimethadone; (2) antihypertensive drugs: Captopril, methyldopa; (3) antimicrobials: Aminoglycosides, amphotericin B, cephalosporins, ethambutol; (4) antineoplastic agents: Cisplatin, methotrexate, mitomycin-C, nitrosoureas, radiation; (4) sulfonamide diuretics: Acetazolamide, chlorthalidone, furosemide, thiazides; (5) halogenated alkanes, hydrocarbons, and solvents that may occur in some settings: Carbon tetrachloride, ethylene glycol, toluene; iodinated radiographic contrast media; nonsteroidal anti-inflammatory drugs; and, (7) other miscellaneous compounds: Acetominophen, allopurinol, amphetamines, azathioprine, cimetidine, cyclosporine, lithium, methoxyflurane, methysergide, D-penicillamine, phenacetin, phenendione. A list of drugs associated with acute interstitial nephritis includes: (1) Antimicrobial drugs: Cephalosporins, chloramphenicol, colistin, erythromycin, ethambutol, isoniazid, para-aminosalicylic acid, penicillins, polymyxin B, rifampin, sulfonamides, tetracyclines, and vancomycin; (2) other miscellaneous drugs: Allopurinol, antipyrene, azathioprine, captopril, cimetidine, clofibrate, methyldopa, phenindione, phenylpropanolamine, phenytoin, probenecid, sulfinpyrazone, sulfonamid diuretics, triamterene; and, (3) metals: Bismuth, gold.

This list have been derived from commonly available medical textbooks (e.g., Ex. 14–18). The list has been included merely to facilitate the physician's, employer's, and employee's understanding. The list does not represent an official OSHA opinion or policy regarding the use of these medications for particular employees. The use of such medications should be under physician discretion.

Attachment 3—Biological Monitoring and Medical Examination Results

Employee _____

Testing Date _____

Cadmium in Urine _____ µg/g Cr—Normal Levels: ≤3 µg/g Cr.

Cadmium in Blood _____ µg/lwb—Normal Levels: ≤5 µg/lwb.

Beta-2-microglobulin in Urine _____ µg/g Cr—Normal Levels: ≤300 µg/g Cr.

Physical Examination Results: N/A _____ Satisfactory _____ Unsatisfactory _____ (see physician again).

Physician's Review of Pulmonary Function Test: N/A _____ Normal _____ Abnormal _____.

Next biological monitoring or medical examination scheduled for _____

The biological monitoring program has been designed for three main purposes: 1) to identify employees at risk of adverse health effects from excess, chronic exposure to cadmium; 2) to prevent cadmium-induced disease(s); and 3) to detect and minimize existing cadmium-induced disease(s).

The levels of cadmium in the urine and blood provide an estimate of the total amount of cadmium in the body. The amount of a specific protein in the urine (beta-2-microglobulin) indicates changes in kidney function. All three tests must be evaluated together. A single mildly elevated result may not be important if testing at a later time indicates that the results are normal and the workplace has been evaluated to decrease possible sources of cadmium exposure. The levels of cadmium or beta-2-microglobulin may change over a period of days to months and the time needed for those changes to occur is different for each worker.

If the results for biological monitoring are above specific "high levels" [cadmium urine greater than 10 micrograms per gram of creatinine (µg/g Cr), cadmium blood greater than 10 micrograms per liter of whole blood (µg/lwb), or beta-2-microglobulin greater than 1000 micrograms per gram of creatinine (µg/g Cr)], the worker has a much greater chance of developing other kidney diseases.

One way to measure for kidney function is by measuring beta-2-microglobulin in the urine. Beta-2-microglobulin is a protein which is normally found in the blood as it is being filtered in the kidney, and the kidney reabsorbs or returns almost all of the beta-2-microglobulin to the blood. A very small amount (less than 300 µg/g Cr in the urine) of beta-2-microglobulin is not reabsorbed into the blood, but is released in the urine. If cadmium damages the kidney, the amount of beta-2-microglobulin in the urine increases because the kidney cells are unable to reabsorb the beta-2-microglobulin normally. An increase in the amount of beta-2-microglobulin in the urine is a very early sign of kidney dysfunction. A small increase in beta-2-microglobulin in the urine will serve as an early warning sign that the worker may be absorbing cadmium from the air, cigarettes contaminated in the workplace, or eating in areas that are cadmium contaminated.

Even if cadmium causes permanent changes in the kidney's ability to reabsorb beta-2-microglobulin, and the beta-2-microglobulin is above the "high levels", the loss of kidney function may not lead to any serious health problems. Also, renal function naturally declines as people age. The risk for changes in kidney function for workers who have biological monitoring results between the "normal values" and the "high levels" is not well known. Some people are more cadmium-tolerant, while others are more cadmium-susceptible.

For anyone with even a slight increase of beta-2-microglobulin, cadmium in the urine, or cadmium in the blood, it is very important to protect the kidney from further damage. Kidney damage can come from other sources than excess cadmium-exposure so it is also recommended that if a worker's levels are "high" he/she should receive counseling about drinking more water; avoiding cadmium-tainted tobacco and certain medications (nephrotoxins, acetaminophen); controlling diet, vitamin intake, blood pressure and diabetes; etc.

Appendix B to § 1915.1027—Substance Technical Guidelines for Cadmium

I. Cadmium Metal.

A. *Physical and Chemical Data.*

1. *Substance Identification.*

Chemical name: Cadmium.

Formula: Cd.

Molecular Weight: 112.4.

Chemical Abstracts Service (CAS) Registry No.: 7740–43–9.

Other Identifiers: RETCS EU9800000; EPA D006; DOT 2570 53.

Synonyms: Colloidal Cadmium: Kadmium (German): CI 77180.

2. *Physical data.*

Boiling point: (760 mm Hg): 765 degrees C.

Melting point: 321 degrees C.

Specific Gravity: (H_2O=@ 20 °C): 8.64.

Solubility: Insoluble in water; soluble in dilute nitric acid and in sulfuric acid.

Appearance: Soft, blue-white, malleable, lustrous metal or grayish-white powder.

B. *Fire, Explosion and Reactivity Data.*

1. *Fire.*

Fire and Explosion Hazards: The finely divided metal is pyrophoric, that is the dust is a severe fire hazard and moderate explosion hazard when exposed to heat or flame. Burning material reacts violently with extinguishing agents such as water, foam, carbon dioxide, and halons.

Flash point: Flammable (dust).

Extinguishing media: Dry sand, dry dolomite, dry graphite, or sodimum chloride.

2. *Reactivity.*

Conditions contributing to instability: Stable when kept in sealed containers under normal temperatures and pressure, but dust may ignite upon contact with air. Metal tarnishes in moist air.

Incompatibilities: Ammonium nitrate, fused: Reacts violently or explosively with cadmium dust below 20 °C. Hydrozoic acid: Violent explosion occurs after 30 minutes. Acids: Reacts violently, forms hydrogen gas. Oxidizing agents or metals: Strong reaction with cadmium dust. Nitryl fluoride at slightly elevated temperature: Glowing or white incandescence occurs. Selenium: Reacts exothermically. Ammonia: Corrosive reaction. Sulfur dioxide: Corrosive reaction. Fire extinguishing agents (water, foam, carbon dioxide, and halons): Reacts violently. Tellurium: Incandescent reaction in hydrogen atmosphere.

Hazardous decomposition products: The heated metal rapidly forms highly toxic, brownish fumes of oxides of cadmium.

C. *Spill, Leak and Disposal Procedures.*

1. *Steps to be taken if the materials is released or spilled.* Do not touch spilled material. Stop leak if you can do it without risk. Do not get water inside container. For large spills, dike spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry. The Superfund Amendments and Reauthorization Act of 1986 Section 304 requires that a release equal to or greater than the reportable quantity for this substance (1 pound) must be immediately reported to the local emergency planning committee, the state emergency response commission, and the National Response Center (800) 424–8802; in Washington, DC metropolitan area (202) 426–2675.

II. Cadmium Oxide.

A. *Physical and Chemical Date.*

1. *Substance identification.*

Chemical name: Cadmium Oxide.

Formula: CdO.

Molecular Weight: 128.4.

CAS No.: 1306–19–0.

Other Identifiers: RTECS EV1929500.

Synonyms: Kadmu tlenek (Polish).

2. *Physical data.*

Boiling point (760 mm Hg): 950 degrees C decomposes.

Melting point: 1500 °C.

Specific Gravity: (H_2O=1@20 °C): 7.0.

Solubility: Insoluble in water; soluble in acids and alkalines.

Appearance: Red or brown crystals.

B. *Fire, Explosion and Reactivity Data.*

1. *Fire.*

Fire and Explosion Hazards: Negligible fire hazard when exposed to heat or flame.

Flash point: Nonflammable.

Extinguishing media: Dry chemical, carbon dioxide, water spray or foam.

2. *Reactivity.*

Conditions contributing to instability: Stable under normal temperatures and pressures.

Incompatibilities: Magnesium may reduce CdO_2 explosively on heating.

Hazardous decomposition products: Toxic fumes of cadmium.

C. *Spill Leak and Disposal Procedures.*

1. *Steps to be taken if the material is released or spilled.* Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For small dry spills, use a clean shovel to place material into clean, dry container and then cover. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry. The Superfund Amendments and Reauthorization Act of 1986 Section 304 requires that a release equal to or greater than the reportable quantity for this substance (1 pound) must be immediately reported to the local emergency planning committee, the state emergency response commission, and the National Response Center (800) 424–8802; in Washington, DC metropolitan area (202) 426–2675.

III. Cadmium Sulfide.

A. *Physical and Chemical Data.*

1. *Substance Identification.*

Chemical name: Cadmium sulfide.

Formula: CdS.

Molecular weight: 144.5.

CAS No. 1306–23–6.

Other Identifiers: RTECS EV3150000.

Synonyms: Aurora yellow; Cadmium Golden 366; Cadmium Lemon Yellow 527; Cadmium Orange; Cadmium Primrose 819; Cadmium Sulphide; Cadmium Yellow; Cadmium Yellow 000; Cadmium Yellow Conc. Deep; Cadmium Yellow Conc. Golden; Cadmium Yellow Conc. Lemon; Cadmium Yellow Conc. Primrose; Cadmium Yellow Oz. Dark; Cadmium Yellow Primrose 47–1400; Cadmium Yellow 10G Conc.; Cadmium Yellow 892; Cadmopur Golden Yellow N; Cadmopur Yellow: Capsebon; C.I. 77199; C.I. Pigment Orange 20; CI Pigment Yellow 37; Ferro Lemon Yellow; Ferro Orange Yellow; Ferro Yellow; Greenockite; NCI–C02711.

2. *Physical data.*

Boiling point (760 mm. Hg): sublines in N_2 at 980 °C.

Melting point: 1750 degrees C (100 atm).
Specific Gravity: (H_2O=1@ 20 °C): 4.82.
Solubility: Slightly soluble in water; soluble in acid.
Appearance: Light yellow or yellow-orange crystals.
B. *Fire, Explosion and Reactivity Data.*
1. *Fire.*
Fire and Explosion Hazards: Neglible fire hazard when exposed to heat or flame.
Flash point: Nonflammable.
Extinguishing media: Dry chemical, carbon dioxide, water spray or foam.
2. *Reactivity.*
Conditions contributing to instability: Generally non-reactive under normal conditions. Reacts with acids to form toxic hydrogen sulfide gas.
Incompatibilities: Reacts vigorously with iodinemonochloride.
Hazardous decomposition products: Toxic fumes of cadmium and sulfur oxides.
C. *Spill Leak and Disposal Procedures.*
1. *Steps to be taken if the material is released or spilled.* Do not touch spilled material. Stop leak if you can do it without risk. For small, dry spills, with a clean shovel place material into clean, dry container and cover. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard and deny entry.
IV. Cadmium Chloride.
A. *Physical and Chemical Data.*
1. *Substance Identification.*
Chemical name: Cadmium chloride.
Formula: $CdCl_2$.
Molecular weight: 183.3.
CAS No. 10108–64–2.
Other Identifiers: RTECS EY0175000.
Synonyms: Caddy; Cadmium dichloride; NA 2570 (DOT); UI-CAD; dichlorocadmium.
2. *Physical data.*
Boiling point (760 mm Hg): 960 degrees C.
Melting point: 568 degrees C.
Specific Gravity: (H_2O=1 @ 20 °C): 4.05.
Solubility: Soluble in water (140 g/100 cc); soluble in acetone.
Appearance: Small, white crystals.
B. *Fire, Explosion and Reactivity Data.*
1. *Fire.*
Fire and Explosion Hazards: Negligible fire and negligible explosion hazard in dust form when exposed to heat or flame.
Flash point: Nonflamable.
Extinguishing media: Dry chemical, carbon dioxide, water spray or foam.
2. *Reactivity.*
Conditions contributing to instability: Generally stable under normal temperatures and pressures.
Incompatibilities: Bromine triflouride rapidly attacks cadmium chloride. A mixture of potassium and cadmium chloride may produce a strong explosion on impact.
Hazardous decomposition products: Thermal ecompostion may release toxic fumes of hydrogen chloride, chloride, chlorine or oxides of cadmium.
C. *Spill Leak and Disposal Procedures.*
1. *Steps to be taken if the materials is released or spilled.* Do not touch spilled material. Stop leak if you can do it without risk. For small, dry spills, with a clean shovel place material into clean, dry container and cover. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard and deny entry. The Superfund Amendments and Reauthorization Act of 1986 Section 304 requires that a release equal to or greater than the reportable quantity for this substance (100 pounds) must be immediately reported to the local emergency planning committee, the state emergency response commission, and the National Response Center (800) 424–8802; in Washington, DC Metropolitan area (202) 426–2675.

Appendix C to §1915.1027—Qualitative and Quantitative Fit Testing Procedures

I. Fit Test Protocols

A. General: The employer shall include the following provisions in the fit test procedures. These provisions apply to both qualitative fit testing (QLFT) and quantitative fit testing (QNFT). All testing is to be conducted annually.

1. The test subject shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers. The selection shall include at least three sizes of elastomeric facepieces of the type of respirator that is to be tested, i.e., three sizes of half mask; or three sizes of full facepiece. Respirators of each size must be provided from at least two manufacturers.

2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine a comfortable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning the respirator. This instruction may not constitute the subject's formal training on respirator use; it is only a review.

3. The test subject shall be informed that he/she is being asked to select the respirator which provides the most comfortable fit. Each respirator represents a different size and shape, and if fitted, maintained and used properly, will provide substantial protection.

4. The test subject shall be instructed to hold each facepiece up to the face and eliminate those which obviously do not give a comfortable fit.

5. The more comfortable facepieces are noted; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in item 6 below. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) Position of the mask on the nose;
(b) Room for eye protection;
(c) Room to talk; and
(d) Position of mask on face and cheeks.

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) Chin properly placed;
(b) Adequate strap tension, not overly tightened;
(c) Fit across nose bridge;
(d) Respirator of proper size to span distance from nose to chin;
(e) Tendency of respirator to slip; and
(f) Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct the negative and positive pressure fit checks as described below or in ANSI Z88.2–1980. Before conducting the negative or positive pressure test, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the fit check tests.

(a). *Positive pressure test.* Close off the exhalation valve and exhale gently onto the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

(b). *Negative pressure test.* Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s). Inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, or long sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respiratory disease or pulmonary medicine to determine, in accordance with paragraph (l)(2) and (3) of this standard, whether the test subject can wear a respirator while performing her or his duties.

11. The test subject shall be given the opportunity to wear the successfully fitted respirator for a period of two weeks. If at any time during this period the respirator becomes uncomfortable, the test subject shall be given the opportunity to select a different facepiece and to be retested.

12. The employer shall maintain a record of the fit test administered to an employee. The record shall contain at least the following information:

(a) Name of employee;
(b) Type of respirator;
(c) Brand, size of respirator;
(d) Date of test; and
(e) Where QNFT is used, the fit factor and strip chart recording or other recording of the results of the test. The record shall be maintained until the next fit test is administered.

13. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

14. Test Exercises. The test subject shall perform exercises, in the test environment, in the manner described below:

(a) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

(b) Deep breathing. In a normal standing position, without talking, the subject shall breathe slowly and deeply, taking care so as to not hyperventilate.

(c) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(d) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(e) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

(f) Grimace. The test subject shall grimace by smiling or frowning.

(g) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT units which prohibit bending at the waist.

(h) Normal breathing. Same as exercise 1. Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become uncomfortable, another model of respirator shall be tried.

B. Qualitative Fit Test (QLFT) Protocols

1. General

(a) The employer shall assign specific individuals who shall assume full responsibility for implementing the respirator qualitative fit test program.

(b) The employer shall assure that persons administering QLFTs are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and assure that test equipment is in proper working order.

(c) The employer shall assure that QLFT equipment is kept clean and well maintained so as to operate within the parameters for which it was designed.

2. Isoamyl Acetate Protocol

(a) Odor threshold screening. The odor threshold screening test, performed without wearing a respirator, is intended to determine if the individual tested can detect the odor of isoamyl acetate.

(1) Three 1-liter glass jars with metal lids are required.

(2) Odor free water (e.g. distilled or spring water) at approximately 25 degrees C shall be used for the solutions.

(3) The isoamyl acetate (IAA) (also known as isopentyl acetate) stock solution is prepared by adding 1 cc of pure IAA to 800 cc of odor free water in a 1 liter jar and shaking for 30 seconds. A new solution shall be prepared at least weekly.

(4) The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well ventilated and shall not be connected to the same recirculating ventilation system.

(5) The odor test solution is prepared in a second jar by placing 0.4 cc of the stock solution into 500 cc of odor free water using a clean dropper or pipette. The solution shall be shaken for 30 seconds and allowed to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution shall be used for only one day.

(6) A test blank shall be prepared in a third jar by adding 500 cc of odor free water.

(7) The odor test and test blank jars shall be labeled 1 and 2 for jar identification. Labels shall be placed on the lids so they can be periodically peeled, dried off and switched to maintain the integrity of the test.

(8) The following instruction shall be typed on a card and placed on the table in front of the two test jars (i.e., 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

(9) The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

(10) If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test shall not be performed.

(11) If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

(b) Isoamyl acetate fit test—

(1) The fit test chamber shall be similar to a clear 55-gallon drum liner suspended inverted over a 2-foot diameter frame so that the top of the chamber is about 6 inches above the test subject's head. The inside top center of the chamber shall have a small hook attached.

(2) Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors. The cartridges or masks shall be changed at least weekly.

(3) After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

(4) A copy of the test exercises and any prepared text from which the subject is to read shall be taped to the inside of the test chamber.

(5) Upon entering the test chamber, the test subject shall be given a 6-inch by 5-inch piece of paper towel, or other porous, absorbent, single-ply material, folded in half and wetted with 0.75 cc of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber.

(6) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the head exercises; and to demonstrate some of the exercises.

(7) If at any time during the test, the subject detects the banana like odor of IAA, the respirator fit is inadequate. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

(8) If the respirator fit was inadequate, the subject shall return to the selection room and remove the respirator, repeat the odor sensitivity test, select and put on another respirator, return to the test chamber and again begin the procedure described in paragraph (I)(B)(2)(b) (1) through (7) of this appendix. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait about 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

(9) When a respirator is found that passes the test, its efficiency shall be demonstrated for the subject by having the subject break the face seal and take a breath before exiting the chamber.

(10) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test. To keep the test area from becoming contaminated, the used towels shall be kept in a self sealing bag so there is no significant IAA concentration build-up in the test chamber during subsequent tests.

3. Irritant Fume Protocol

(a) The respirator to be tested shall be equipped with high-efficiency particulate air (HEPA) filters.

(b) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its characteristic odor.

(c) Break both ends of a ventilation smoke tube containing stannic oxychloride, such as the MSA part No. 5645, or equivalent. Attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute.

(d) Advise the test subject that the smoke can be irritating to the eyes and instruct the subject to keep his/her eyes closed while the test is performed.

(e) The test conductor shall direct the stream of irritant smoke from the smoke tube

towards the face seal area of the test subject. He/she shall begin at least 12 inches from the facepiece and gradually move to within one inch, moving around the whole perimeter of the mask.

(f) The exercises identified in section I. A. 14 above shall be performed by the test subject while the respirator seal is being challenged by the smoke.

(g) Each test subject passing the smoke test without evidence of a response shall be given a sensitivity check of the smoke from the same tube once the respirator has been removed to determine whether he/she reacts to the smoke. Failure to evoke a response shall void the fit test.

(h) The fit test shall be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agent.

4. Saccharin Solution Aerosol Protocol

The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste threshold screening. The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

(1) Threshold screening as well as fit testing subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a ¾ inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her wide open mouth with tongue extended.

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer the test conductor shall spray the threshold check solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The threshold check solution consists of 0.83 grams of sodium saccharin USP in 1 cc of warm water. It can be prepared by putting 1 cc of the fit test solution (see (b)(5) below) in 100 cc of distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.

(7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the saccharin is not tasted after 30 squeezes (step 10), the test subject may not perform the saccharin fit test.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 cc of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Saccharin solution aerosol fit test procedure

(1) The test subject may not eat, drink (except plain water), or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure described in (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected in section (a) above. The respirator shall be properly adjusted and equipped with a particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 cc of warm water.

(6) As before, the test subject shall breathe through the open mouth with tongue extended.

(7) The nebulizer is inserted into the hole in the front of the enclosure and the fit test solution is sprayed into the enclosure using the same number of squeezes required to elicit a taste response in the screening test.

(8) After generating the aerosol the test subject shall be instructed to perform the exercises in section I.A. 14 above.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes as initially.

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected.

(11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and a different respirator shall be tried".

C. Quantitative Fit Test (QNFT) Protocol

1. General

(a) The employer shall assign specific individuals who shall assume full responsibility for implementing the respirator quantitative fit test program.

(b) The employer shall ensure that persons administering QNFT are able to calibrate equipment and perform tests properly, recognize invalid tests, calculate fit factors properly and assure that test equipment is in proper working order.

(c) The employer shall assure that QNFT equipment is kept clean and well maintained so as to operate at the parameters for which it was designed.

2. Definitions

(a) Quantitative fit test. The test is performed in a test chamber. The normal air-purifying element of the respirator is replaced by a high-efficiency particulate air (HEPA) filter in the case of particulate QNFT aerosols or a sorbent offering contaminant penetration protection equivalent to high-efficiency filters where the QNFT test agent is a gas or vapor.

(b) Challenge agent means the aerosol, gas or vapor introduced into a test chamber so that its concentration inside and outside the respirator may be measured.

(c) Test subject means the person wearing the respirator for quantitative fit testing.

(d) Normal standing position means standing erect and straight with arms down along the sides and looking straight ahead.

(e) Maximum peak penetration method means the method of determining test agent penetration in the respirator as determined by strip chart recordings of the test. The highest peak penetration for a given exercise is taken to be representative of average penetration into the respirator for that exercise.

(f) Average peak penetration method means the method of determining test agent penetration into the respirator utilizing a strip chart recorder, integrator, or computer. The agent penetration is determined by an average of the peak heights on the graph or by computer integration, for each exercise except the grimace exercise. Integrators or computers which calculate the actual test agent penetration into the respirator for each exercise will also be considered to meet the requirements of the average peak penetration method.

(g) "Fit Factor" means the ration of challenge agent concentration outside with respect to the inside of a respirator inlet covering (facepiece or enclosure).

3. Apparatus

(a) Instrumentation. Aerosol generation, dilution, and measurement systems using corn oil or sodium chloride as test aerosols shall be used for quantitative fit testing.

(b) Test chamber. The test chamber shall be large enough to permit all test subjects to perform freely all required exercises without disturbing the challenge agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the challenge agent is effectively isolated from the ambient air, yet uniform in concentration throughout the chamber.

(c) When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high-efficiency particulate filter supplied by the same manufacturer.

(d) The sampling instrument shall be selected so that a strip chart record may be made of the test showing the rise and fall of the challenge agent concentration with each inspiration and expiration at fit factors of at least 2,000. Integrators or computers which integrate the amount of test agent penetration leakage into the respirator for each exercise may be used provided a record of the readings is made.

(e) The combination of substitute air-purifying elements, challenge agent and challenge agent concentration in the test

chamber shall be such that the test subject is not exposed in excess of an established exposure limit for the challenge agent at any time during the testing process.

(f) The sampling port on the test specimen respirator shall be placed and constructed so that no leakage occurs around the port (e.g. where the respirator is probed), a free air flow is allowed into the sampling line at all times and so that there is no interference with the fit or performance of the respirator.

(g) The test chamber and test set up shall permit the person administering the test to observe the test subject inside the chamber during the test.

(h) The equipment generating the challenge atmosphere shall maintain the concentration of challenge agent inside the test chamber constant to within a 10-percent variation for the duration of the test.

(i) The time lag (interval between an event and the recording of the event on the strip chart or computer or integrator) shall be kept to a minimum. There shall be a clear association between the occurrence of an event inside the test chamber and its being recorded.

(j) The sampling line tubing for the test chamber atmosphere and for the respirator sampling port shall be of equal diameter and of the same material. The length of the two lines shall be equal.

(k) The exhaust flow from the test chamber shall pass through a high-efficiency filter before release.

(l) When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.

(m) The limitations of instrument detection shall be taken into account when determining the fit factor

(n) Test respirators shall be maintained in proper working order and inspected for deficiencies such as cracks, missing valves and gaskets, etc.

4. Procedural Requirements

(a) When performing the initial positive or negative pressure test the sampling line shall be crimped closed in order to avoid air pressure leakage during either of these tests.

(b) An abbreviated screening isoamyl acetate test or irritant fume test may be utilized in order to quickly identify poor fitting respirators which passed the positive and/or negative pressure test and thus reduce the amount of QNFT time. When performing a screening isoamyl acetate test, combination high-efficiency organic vapor cartridges/canisters shall be used.

(c) A reasonably stable challenge agent concentration shall be measured in the test chamber prior to testing. For canopy or shower curtain type of test units the determination of the challenge agent stability may be established after the test subject has entered the test environment.

(d) Immediately after the subject enters the test chamber, the challenge agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half mask or 1 percent for a full facepiece respirator.

(e) A stable challenge concentration shall be obtained prior to the actual start of testing.

(f) Respirator restraining straps shall not be overtightened for testing. The straps shall be adjusted by the wearer without assistance from other persons to give a reasonable comfortable fit typical of normal use.

(g) The test shall be terminated whenever any single peak penetration exceeds 5 percent for half masks and 1 percent for full facepiece respirators. The test subject shall be refitted and retested. If two of the three required tests are terminated, the fit shall be deemed inadequate.

(h) In order to successfully complete a QNFT, three successful fit tests are required. The results of each of the three independent fit tests must exceed the minimum fit factor needed for the class of respirator (e.g. half mask respirator, full facepiece respirator).

(i) Calculation of fit factors.

(1) The fit factor shall be determined for the quantitative fit test by taking the ratio of the average chamber concentration to the concentration inside the respirator.

(2) The average test chamber concentration is the arithmetic average of the test chamber concentration at the beginning and at the end of the test.

(3) The concentration of the challenge agent inside the respirator shall be determined by one of the following methods:

(i) Average peak concentration;

(ii) Maximum peak concentration;

(iii) Integration by calculation of the area under the individual peak for each exercise. This includes computerized integration.

(j) Interpretation of test results. The fit factor established by the quantitative fit testing shall be the lowest of the three fit factor values calculated from the three required fit tests.

(k) The test subject shall not be permitted to wear a half mask, or full facepiece respirator unless a minimum fit factor equivalent to at least 10 times the hazardous exposure level is obtained.

(l) Filters used for quantitative fit testing shall be replaced at least weekly, or whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media. Organic vapor cartridges/canisters shall be replaced daily (when used) or sooner if there is any indication of breakthrough by a test agent.

Appendix D to § 1915.1027—Occupational Health History Interview With Reference to Cadmium Exposure

Directions

(To be read by employee and signed prior to the interview)

Please answer the questions you will be asked as completely and carefully as you can. These questions are asked of everyone who works with cadmium. You will also be asked to give blood and urine samples. The doctor will give your employer a written opinion on whether you are physically capable of working with cadmium. Legally, the doctor cannot share personal information you may tell him/her with your employer. The following information is considered strictly confidential. The results of the tests will go to you, your doctor and your employer. You will also receive an information sheet explaining the results of any biological monitoring or physical examinations performed.

If you are just being hired, the results of this interview and examination will be used to:

(1) Establish your health status and see if working with cadmium might be expected to cause unusual problems,

(2) Determine your health status today and see if there are changes over time,

(3) See if you can wear a respirator safely.

If you are not a new hire:

OSHA says that everyone who works with cadmium can have periodic medical examinations performed by a doctor. The reasons for this are:

(a) If there are changes in your health, either because of cadmium or some other reason, to find them early,

(b) to prevent kidney damage.

Please sign below.

I have read these directions and understand them·

_____

Employee signature

_____

Date

Thank you for answering these questions.

(Suggested Format)

Name _____

Age _____

Social Security # _____

Company _____

Job _____

Type of Preplacement Exam:

[ ] Periodic

[ ] Termination

[ ] Initial

[ ] Other

Blood Pressure _____

Pulse Rate _____

1. How long have you worked at the job listed above?

[ ] Not yet hired

[ ] Number of months

[ ] Number of years

2. Job Duties etc.

_____

_____

_____

3. Have you *ever* been told by a doctor that you had bronchitis?

[ ] Yes

[ ] No

If yes, how long ago?

[ ] Number of months

[ ] Number of years

4. Have you *ever* been told by a doctor that you had emphysema?

[ ] Yes

[ ] No

If yes, how long ago?

[ ] Number of years

[ ] Number of months

5. Have you ever been told by a doctor that you had other lung problems?

[ ] Yes

[ ] No

If yes, please describe type of lung problems and when you had these problems

6. In the past year, have you had a cough?
[ ] Yes
[ ] No
If yes, did you cough up sputum?
[ ] Yes
[ ] No
If yes, how long did the cough with sputum production last?
[ ] Less than 3 months
[ ] 3 months or longer
If yes, for how many years have you had episodes of cough with sputum production lasting this long?
[ ] Less than one
[ ] 1
[ ] 2
[ ] Longer than 2

7 Have you ever smoked cigarettes?
[ ] Yes
[ ] No

8. Do you now smoke cigarettes?
[ ] Yes
[ ] No

9. If you smoke or have smoked cigarettes, for how many years have you smoked, or did you smoke?
[ ] Less than 1 year
[ ] Number of years
What is or was the greatest number of packs per day that you have smoked?
[ ] Number of packs
If you quit smoking cigarettes, how many years ago did you quit?
[ ] Less than 1 year
[ ] Number of years
How many packs a day do you now smoke?
[ ] Number of packs per day

10. Have you ever been told by a doctor that you had a kidney or urinary tract disease or disorder?
[ ] Yes
[ ] No

11. Have you ever had any of these disorders?

Kidney stones	[ ] Yes	[ ] No
Protein in urine	[ ] Yes	[ ] No
Blood in urine	[ ] Yes	[ ] No
Difficulty urinating	[ ] Yes	[ ] No
Other kidney/Urinary disorders.	[ ] Yes	[ ] No

Please describe problems, age, treatment, and follow up for any kidney or urinary problems you have had:

12. Have you ever been told by a doctor or other health care provider who took your blood pressure that your blood pressure was high?
[ ] Yes
[ ] No

13. Have you ever been advised to take any blood pressure medication?
[ ] Yes
[ ] No

14. Are you presently taking any blood pressure medication?
[ ] Yes
[ ] No

15. Are you presently taking any other medication?
[ ] Yes
[ ] No

16. Please list any blood pressure or other medications and describe how long you have been taking each one:

Medicine:

How Long Taken

17. Have you ever been told by a doctor that you have diabetes? (sugar in your blood or urine)
[ ] Yes
[ ] No
If yes, do you presently see a doctor about your diabetes?
[ ] Yes
[ ] No
If yes, how do you control your blood sugar?
[ ] Diet alone
[ ] Diet plus oral medicine
[ ] Diet plus insulin (injection)

18. Have you ever been told by a doctor that you had:

Anemia	[ ] Yes	[ ] No
A low blood count?	[ ] Yes	[ ] No

19. Do you presently feel that you tire or run out of energy sooner than normal or sooner than other people your age?
[ ] Yes
[ ] No
If yes, for how long have you felt that you tire easily?
[ ] Less than 1 year
[ ] Number of years

20. Have you given blood within the last year?
[ ] Yes
[ ] No
If yes, how many times?
[ ] Number of times
How long ago was the last time you gave blood?
[ ] Less than 1 month
[ ] Number of months

21. Within the last year have you had any injuries with heavy bleeding?
[ ] Yes
[ ] No
If yes, how long ago?
[ ] Less than 1 month
[ ] Number of months
Describe:

22. Have you recently had any surgery?
[ ] Yes
[ ] No
If yes, please describe:

23. Have you seen any blood lately in your stool or after a bowel movement?
[ ] Yes
[ ] No

24. Have you ever had a test for blood in your stool?
[ ] Yes
[ ] No
If yes, did the test show any blood in the stool?
[ ] Yes
[ ] No
What further evaluation and treatment were done?

The following questions pertain to the ability to wear a respirator. Additional information for the physician can be found in The Respiratory Protective Devices Manual.

25. Have you ever been told by a doctor that you have asthma?
[ ] Yes
[ ] No
If yes, are you presently taking any medication for asthma? Mark all that apply
[ ] Shots
[ ] Pills
[ ] Inhaler

26. Have you ever had a heart attack?
[ ] Yes
[ ] No
If yes, how long ago?
[ ] Number of years
[ ] Number of months

27. Have you ever had pains in your chest?
[ ] Yes
[ ] No
If yes, when did it usually happen?
[ ] While resting
[ ] While working
[ ] While exercising
[ ] Activity didn't matter

28. Have you ever had a thyroid problem?
[ ] Yes
[ ] No

29. Have you ever had a seizure or fits?
[ ] Yes
[ ] No

30. Have you ever had a stroke (cerebrovascular accident)?
[ ] Yes
[ ] No

31. Have you ever had a ruptured eardrum or a serious hearing problem?
[ ] Yes
[ ] No

32. Do you now have a claustrophobia, meaning fear of crowded or closed in spaces or any psychological problems that would make it hard for you to wear a respirator?
[ ] Yes
[ ] No

The following questions pertain to reproductive history

33. Have you or your partner had a problem conceiving a child?
[ ] Yes
[ ] No
If yes, specify:
[ ] Self
[ ] Present mate
[ ] Previous mate

34. Have you or your partner consulted a physician for a fertility or other reproductive problem?
[ ] Yes
[ ] No
If yes, specify who consulted the physician:
[ ] Self

[ ] Spouse/partner
[ ] Self and partner
If yes, specify diagnosis made: _____

35. Have you or your partner ever conceived a child resulting in a miscarriage, still birth or deformed offspring?
[ ] Yes
[ ] No
If yes, specify:
[ ] Miscarriage
[ ] Still birth
[ ] Deformed offspring
If outcome was a deformed offspring, please specify type: _____

36. Was this outcome a result of a pregnancy of:
[ ] Yours with present partner
[ ] Yours with a previous partner
37 Did the timing of any abnormal pregnancy outcome coincide with present employment?
[ ] Yes
[ ] No
List dates of occurrences: _____

38. What is the occupation of your spouse or partner?

For Women Only

39. Do you have menstrual periods?
[ ] Yes
[ ] No
Have you had menstrual irregularities?
[ ] Yes
[ ] No
If yes, specify type: _____

If yes, what was the approximate date this problem began? _____

Approximate date problem stopped? _____

For Men Only

40. Have you ever been diagnosed by a physician as having prostate gland problem(s)?
[ ] Yes
[ ] No
If yes, please describe type of problem(s) and what was done to evaluate and treat the problem(s): _____

Appendix E to § 1915.1027—Cadmium in Workplace Atmospheres

Method Number: ID–189
Matrix: Air
OSHA Permissible Exposure Limits: 5 μg/m³ (TWA), 2.5 μg/m³ (Action Level TWA)
Collection Procedure: A known volume of air is drawn through a 37-mm diameter filter cassette containing a 0.8-μm mixed cellulose ester membrane filter (MCEF).
Recommended Air Volume: 960 L
Recommended Sampling Rate: 2.0 L/min
Analytical Procedure: Air filter samples are digested with nitric acid. After digestion, a small amount of hydrochloric acid is added. The samples are then diluted to volume with deionized water and analyzed by either flame atomic absorption spectroscopy (AAS) or flameless atomic absorption spectroscopy using a heated graphite furnace atomizer (AAS-HGA).
Detection Limits:
Qualitative: 0.2 μg/m³ for a 200 L sample by Flame AAS, 0.007 μg/m³ for a 60 L sample by AAS–HGA
Quantitative: 0.70 μg/m³ for a 200 L sample by Flame AAS, 0.025 μg/m³ for a 60 L sample by AAS–HGA
Precision and Accuracy: (Flame AAS Analysis and AAS–HGA Analysis):
Validation Level: 2.5 to 10 μg/m³ for a 400 L air vol, 1.25 to 5.0 μg/m³ for a 60 L air vol
CV_1 (pooled): 0.010, 0.043
Analytical Bias: +4.0%, −5.8%
Overall Analytical Error: ±6.0%, ±14.2%
Method Classification: Validated
Date: June, 1992

Inorganic Service Branch II, OSHA Salt Lake Technical Center, Salt Lake City, Utah

Commercial manufacturers and products mentioned in this method are for descriptive use only and do not constitute endorsements by USDOL-OSHA. Similar products from other sources can be substituted.

1. Introduction

1.1. Scope

This method describes the collection of airborne elemental cadmium and cadmium compounds on 0.8-μm mixed cellulose ester membrane filters and their subsequent analysis by either flame atomic absorption spectroscopy (AAS) or flameless atomic absorption spectroscopy using a heated graphite furnace atomizer (AAS-HGA). It is applicable for both TWA and Action Level TWA Permissible Exposure Level (PEL) measurements. The two atomic absorption analytical techniques included in the method do not differentiate between cadmium fume and cadmium dust samples. They also do not differentiate between elemental cadmium and its compounds.

1.2. Principle

Airborne elemental cadmium and cadmium compounds are collected on a 0.8-μm mixed cellulose ester membrane filter (MCEF). The air filter samples are digested with concentrated nitric acid to destroy the organic matrix and dissolve the cadmium analytes. After digestion, a small amount of concentrated hydrochloric acid is added to help dissolve other metals which may be present. The samples are diluted to volume with deionized water and then aspirated into the oxidizing air/acetylene flame of an atomic absorption spectrophotometer for analysis of elemental cadmium.

If the concentration of cadmium in a sample solution is too low for quantitation by this flame AAS analytical technique, and the sample is to be averaged with other samples for TWA calculations, aliquots of the sample and a matrix modifier are later injected onto a L'vov platform in a pyrolytically-coated graphite tube of a Zeeman atomic absorption spectrophotometer/graphite furnace assembly for analysis of elemental cadmium. The matrix modifier is added to stabilize the cadmium metal and minimize sodium chloride as an interference during the high temperature charring step of the analysis (5.1., 5.2.).

1.3. History

Previously, two OSHA sampling and analytical methods for cadmium were used concurrently (5.3., 5.4.). Both of these methods also required 0.8-μm mixed cellulose ester membrane filters for the collection of air samples. These cadmium air filter samples were analyzed by either flame atomic absorption spectroscopy (5.3.) or inductively coupled plasma/atomic emission spectroscopy (ICP-AES) (5.4.). Neither of these two analytical methods have adequate sensitivity for measuring workplace exposure to airborne cadmium at the new lower TWA and Action Level TWA PEL levels when consecutive samples are taken on one employee and the sample results need to be averaged with other samples to determine a single TWA.

The inclusion of two atomic absorption analytical techniques in the new sampling and analysis method for airborne cadmium permits quantitation of sample results over a broad range of exposure levels and sampling periods. The flame AAS analytical technique included in this method is similar to the previous procedure given in the General Metals Method ID–121 (5.3.) with some modifications. The sensitivity of the AAS-HGA analytical technique included in this method is adequate to measure exposure levels at 1/10 the Action Level TWA, or lower, when less than full-shift samples need to be averaged together.

1.4. Properties (5.5.)

Elemental cadmium is a silver-white, blue-tinged, lustrous metal which is easily cut with a knife. It is slowly oxidized by moist air to form cadmium oxide. It is insoluble in water, but reacts readily with dilute nitric acid. Some of the physical properties and other descriptive information of elemental cadmium are given below:

CAS No.	7440–43–9
Atomic Number	48
Atomic Symbol	Cd
Atomic Weight	112.41
Melting Point	321 °C
Boiling Point	765 °C
Density	8.65 g/mL (25 °C)

The properties of specific cadmium compounds are described in reference 5.5.

1.5. Method Performance

A synopsis of method performance is presented below. Further information can be found in Section 4.

1.5.1. The qualitative and quantitative detection limits for the flame AAS analytical technique are 0.04 μg (0.004 μg/mL) and 0.14 μg (0.014 μg/mL) cadmium, respectively, for a 10 mL solution volume. These correspond, respectively, to 0.2 μg/m³ and 0.70 μg/m³ for a 200 L air volume.

1.5.2. The qualitative and quantitative detection limits for the AAS-HGA analytical technique are 0.44 ng (0.044 ng/mL) and 1.5

ng (0.15 ng/mL) cadmium, respectively, for a 10 mL solution volume. These correspond, respectively, to 0.007 µg/m³ and 0.025 µg/m³ for a 60 L air volume.

1.5.3. The average recovery by the flame AAS analytical technique of 17 spiked MCEF samples containing cadmium in the range of 0.5 to 2.0 times the TWA target concentration of 5 µg/m³ (assuming a 400 L air volume) was 104.0% with a pooled coefficient of variation (CV_1) of 0.010. The flame analytical technique exhibited a positive bias of +4.0% for the validated concentration range. The overall analytical error (OAE) for the flame AAS analytical technique was ±6.0%.

1.5.4. The average recovery by the AAS-HGA analytical technique of 18 spiked MCEF samples containing cadmium in the range of 0.5 to 2.0 times the Action Level TWA target concentration of 2.5 µg/m³ (assuming a 60 L air volume) was 94.2% with a pooled coefficient of variation (CV_1) of 0.043. The AAS-HGA analytical technique exhibited a negative bias of −5.8% for the validated concentration range. The overall analytical error (OAE) for the AAS-HGA analytical technique was ±14.2%.

1.5.5. Sensitivity in flame atomic absorption is defined as the characteristic concentration of an element required to produce a signal of 1% absorbance (0.0044 absorbance units). Sensitivity values are listed for each element by the atomic absorption spectrophotometer manufacturer and have proved to be a very valuable diagnostic tool to determine if instrumental parameters are optimized and if the instrument is performing up to specification. The sensitivity of the spectrophotometer used in the validation of the flame AAS analytical technique agreed with the manufacturer specifications (5.6.); the 2 µg/mL cadmium standard gave an absorbance reading of 0.350 abs. units.

1.5.6. Sensitivity in graphite furnace atomic absorption is defined in terms of the characteristic mass, the number of picograms required to give an integrated absorbance value of 0.0044 absorbance-second (5.7.). Data suggests that under Stabilized Temperature Platform Furnace (STPF) conditions (see Section 1.6.2.), characteristic mass values are transferable between properly functioning instruments to an accuracy of about 20% (5.2.). The characteristic mass for STPF analysis of cadmium with Zeeman background correction listed by the manufacturer of the instrument used in the validation of the AAS-HGA analytical technique was 0.35 pg. The experimental characteristic mass value observed during the determination of the working range and detection limits of the AAS-HGA analytical technique was 0.41 pg.

1.6. Interferences

1.6.1. High concentrations of silicate interfere in determining cadmium by flame AAS (5.6.). However, silicates are not significantly soluble in the acid matrix used to prepare the samples.

1.6.2. Interferences, such as background absorption, are reduced to a minimum in the AAS-HGA analytical technique by taking full advantage of the Stabilized Temperature Platform Furnace (STPF) concept. STPF includes all of the following parameters (5.2.):

a. Integrated Absorbance,
b. Fast Instrument Electronics and Sampling Frequency,
c. Background Correction,
d. Maximum Power Heating,
e. Atomization off the L'vov platform in a pyrolytically coated graphite tube,
f. Gas Stop during Atomization,
g. Use of Matrix Modifiers.

1.7. Toxicology (5.14.)

Information listed within this section is synopsis of current knowledge of the physiological effects of cadmium and is not intended to be used as the basis for OSHA policy. IARC classifies cadmium and certain of its compounds as Group 2A carcinogens (probably carcinogenic to humans). Cadmium fume is intensely irritating to the respiratory tract. Workplace exposure to cadmium can cause both chronic and acute effects. Acute effects include tracheobronchitis, pneumonitis, and pulmonary edema. Chronic effects include anemia, rhinitis/anosmia, pulmonary emphysema, proteinuria and lung cancer. The primary target organs for chronic disease are the kidneys (non-carcinogenic) and the lungs (carcinogenic).

2. Sampling

2.1. Apparatus

2.1.1. Filter cassette unit for air sampling: A 37-mm diameter mixed cellulose ester membrane filter with a pore size of 0.8-µm contained in a 37-mm polystyrene two- or three-piece cassette filter holder (part no. MAWP 037 A0, Millipore Corp., Bedford, MA). The filter is supported with a cellulose backup pad. The cassette is sealed prior to use with a shrinkable gel band.

2.1.2. A calibrated personal sampling pump whose flow is determined to an accuracy of ±5% at the recommended flow rate with the filter cassette unit in line.

2.2. Procedure

2.2.1. Attach the prepared cassette to the calibrated sampling pump (the backup pad should face the pump) using flexible tubing. Place the sampling device on the employee such that air is sampled from the breathing zone.

2.2.2. Collect air samples at a flow rate of 2.0 L/min. If the filter does not become overloaded, a full-shift (at least seven hours) sample is strongly recommended for TWA and Action Level TWA measurements with a maximum air volume of 960 L. If overloading occurs, collect consecutive air samples for shorter sampling periods to cover the full workshift.

2.2.3. Replace the end plugs into the filter cassettes immediately after sampling. Record the sampling conditions.

2.2.4. Securely wrap each sample filter cassette end-to-end with an OSHA Form 21 sample seal.

2.2.5. Submit at least one blank sample with each set of air samples. The blank sample should be handled the same as the other samples except that no air is drawn through it.

2.2.6. Ship the samples to the laboratory for analysis as soon as possible in a suitable container designed to prevent damage in transit.

3. Analysis

3.1. Safety Precautions

3.1.1. Wear safety glasses, protective clothing and gloves at all times.

3.1.2. Handle acid solutions with care. Handle all cadmium samples and solutions with extra care (see Sect. 1.7.). Avoid their direct contact with work area surfaces, eyes, skin and clothes. Flush acid solutions which contact the skin or eyes with copious amounts of water.

3.1.3. Perform all acid digestions and acid dilutions in an exhaust hood while wearing a face shield. To avoid exposure to acid vapors, do not remove beakers containing concentrated acid solutions from the exhaust hood until they have returned to room temperature and have been diluted or emptied.

3.1.4. Exercise care when using laboratory glassware. Do not use chipped pipets, volumetric flasks, beakers or any glassware with sharp edges exposed in order to avoid the possibility of cuts or abrasions.

3.1.5. Never pipet by mouth.

3.1.6. Refer to the instrument instruction manuals and SOPs (5.8., 5.9.) for proper and safe operation of the atomic absorption spectrophotometer, graphite furnace atomizer and associated equipment.

3.1.7 Because metallic elements and other toxic substances are vaporized during AAS flame or graphite furnace atomizer operation, it is imperative that an exhaust vent be used. Always ensure that the exhaust system is operating properly during instrument use.

3.2. Apparatus for Sample and Standard Preparation

3.2.1. Hot plate, capable of reaching 150 °C, installed in an exhaust hood.

3.2.2. Phillips beakers, 125 mL.

3.2.3. Bottles, narrow-mouth, polyethylene or glass with leakproof caps: used for storage of standards and matrix modifier.

3.2.4. Volumetric flasks, volumetric pipets, beakers and other associated general laboratory glassware.

3.2.5. Forceps and other associated general laboratory equipment.

3.3. Apparatus for Flame AAS Analysis

3.3.1. Atomic absorption spectrophotometer consisting of a(an):

Nebulizer and burner head
Pressure regulating devices capable of maintaining constant oxidant and fuel pressures
Optical system capable of isolating the desired wavelength of radiation (228.8 nm)
Adjustable slit
Light measuring and amplifying device
Display, strip chart, or computer interface for indicating the amount of absorbed radiation
Cadmium hollow cathode lamp or electrodeless discharge lamp (EDL) and power supply

3.3.2. Oxidant: compressed air, filtered to remove water, oil and other foreign substances.

3.3.3. Fuel: standard commercially available tanks of acetylene dissolved in

acetone; tanks should be equipped with flash arresters.

Caution: Do not use grades of acetylene containing solvents other than acetone because they may damage the PVC tubing used in some instruments.

3.3.4. Pressure-reducing valves: two gauge, two-stage pressure regulators to maintain fuel and oxidant pressures somewhat higher than the controlled operating pressures of the instrument.

3.3.5. Exhaust vent installed directly above the spectrophotometer burner head.

3.4. Apparatus for AAS–HGA Analysis

3.4.1. Atomic absorption spectrophotometer consisting of a(an):

Heated graphite furnace atomizer (HGA) with argon purge system
Pressure-regulating devices capable of maintaining constant argon purge pressure
Optical system capable of isolating the desired wavelength of radiation (228.8 nm)
Adjustable slit
Light measuring and amplifying device
Display, strip chart, or computer interface for indicating the amount of absorbed radiation (as integrated absorbance, peak area)
Background corrector: Zeeman or deuterium arc. The Zeeman background corrector is recommended
Cadmium hollow cathode lamp or electrodeless discharge lamp (EDL) and power supply
Autosampler capable of accurately injecting 5 to 20 µL sample aliquots onto the L'vov Platform in a graphite tube

3.4.2. Pyrolytically coated graphite tubes containing solid, pyrolytic L'vov platforms.

3.4.3. Polyethylene sample cups, 2.0 to 2.5 mL, for use with the autosampler.

3.4.4. Inert purge gas for graphite furnace atomizer: compressed gas cylinder of purified argon.

3.4.5. Two gauge, two-stage pressure regulator for the argon gas cylinder.

3.4.6. Cooling water supply for graphite furnace atomizer.

3.4.7. Exhaust vent installed directly above the graphite furnace atomizer.

3.5. Reagents

All reagents should be ACS analytical reagent grade or better.

3.5.1. Deionized water with a specific conductance of less than 10 µS.

3.5.2. Concentrated nitric acid, HNO_3.

3.5.3. Concentrated hydrochloric acid, HCl.

3.5.4. Ammonium phosphate, monobasic, $NH_4H_2PO_4$.

3.5.5. Magnesium nitrate, $Mg(NO_3)_2 \cdot 6H_2O$.

3.5.6. Diluting solution (4% HNO_3, 0.4% HCl): Add 40 mL HNO_3 and 4 mL HCl carefully to approximately 500 mL deionized water and dilute to 1 L with deionized water.

3.5.7. Cadmium standard stock solution, 1,000 µg/mL: Use a commercially available certified 1,000 µg/mL cadmium standard or, alternatively, dissolve 1.0000 g of cadmium metal in a minimum volume of 1:1 HCl and dilute to 1 L with 4% HNO_3. Observe expiration dates of commercial standards. Properly dispose of commercial standards with no expiration dates or prepared standards one year after their receipt or preparation date.

3.5.8. Matrix modifier for AAS–HGA analysis: Dissolve 1.0 g $NH_4H_2PO_4$ and 0.15 g $Mg(NO_3)_2 \cdot 6H_2O$ in approximately 200 mL deionized water. Add 1 mL HNO_3 and dilute to 500 mL with deionized water.

3.5.9 Nitric Acid, 1:1 HNO_3/DI H_2O mixture: Carefully add a measured volume of concentrated HNO_3 to an equal volume of DI H_2O.

3.5.10. Nitric acid, 10% v/v: Carefully add 100 mL of concentrated HNO_3 to 500 mL of DI H_2O and dilute to 1 L.

3.6. Glassware Preparation

3.6.1. Clean Phillips beakers by refluxing with 1:1 nitric acid on a hot plate in a fume hood. Thoroughly rinse with deionized water and invert the beakers to allow them to drain dry.

3.6.2. Rinse volumetric flasks and all other glassware with 10% nitric acid and deionized water prior to use.

3.7. Standard Preparation for Flame AAS Analysis

3.7.1. Dilute stock solutions: Prepare 1, 5, 10 and 100 µg/mL cadmium standard stock solutions by making appropriate serial dilutions of 1,000 µg/mL cadmium standard stock solution with the diluting solution described in Section 3.5.6.

3.7.2. Working standards: Prepare cadmium working standards in the range of 0.02 to 2.0 µg/mL by making appropriate serial dilutions of the dilute stock solutions with the same diluting solution. A suggested method of preparation of the working standards is given below.

Working standard (µg/mL)	Standard solution (µg/mL)	Aliquot (mL)	Final vol. (mL)
0.02	1	10	500
0.05	5	5	500
0.1	10	5	500
0.2	10	10	500
0.5	10	25	500
1	100	5	500
2	100	10	500

Store the working standards in 500-mL, narrow-mouth polyethylene or glass bottles with leak proof caps. Prepare every twelve months.

3.8. Standard Preparation for AAS–HGA Analysis

3.8.1. Dilute stock solutions: Prepare 10, 100 and 1,000 ng/mL cadmium standard stock solutions by making appropriate ten-fold serial dilutions of the 1,000 µg/mL cadmium standard stock solution with the diluting solution described in Section 3.5.6.

3.8.2. Working standards: Prepare cadmium working standards in the range of 0.2 to 20 ng/mL by making appropriate serial dilutions of the dilute stock solutions with the same diluting solution. A suggested method of preparation of the working standards is given below.

Working standard (ng/mL)	Standard solution (ng/mL)	Aliquot (mL)	Final vol. (mL)
0.2	10	2	100
0.5	10	5	100
1	10	10	100
2	100	2	100
5	100	5	100
10	100	10	100
20	1,000	2	100

Store the working standards in narrow-mouth polyethylene or glass bottles with leakproof caps. Prepare monthly.

3.9. Sample Preparation

3.9.1. Carefully transfer each sample filter with forceps from its filter cassette unit to a clean, separate 125-mL Phillips beaker along with any loose dust found in the cassette. Label each Phillips beaker with the appropriate sample number.

3.9.2. Digest the sample by adding 5 mL of concentrated nitric acid (HNO_3) to each Phillips beaker containing an air filter sample. Place the Phillips beakers on a hot plate in an exhaust hood and heat the samples until approximately 0.5 mL remains. The sample solution in each Phillips beaker should become clear. If it is not clear, digest the sample with another portion of concentrated nitric acid.

3.9.3. After completing the HNO_3 digestion and cooling the samples, add 40 µL (2 drops) of concentrated HCl to each air sample solution and then swirl the contents. Carefully add about 5 mL of deionized water by pouring it down the inside of each beaker.

3.9.4. Quantitatively transfer each cooled air sample solution from each Phillips beaker to a clean 10-mL volumetric flask. Dilute each flask to volume with deionized water and mix well.

3.10. Flame AAS Analysis

Analyze all of the air samples for their cadmium content by flame atomic absorption spectroscopy (AAS) according to the instructions given below.

3.10.1. Set up the atomic absorption spectrophotometer for the air/acetylene flame analysis of cadmium according to the SOP (5.8.) or the manufacturer's operational instructions. For the source lamp, use the cadmium hollow cathode or electrodeless discharge lamp operated at the manufacturer's recommended rating for continuous operation. Allow the lamp to warm up 10 to 20 min or until the energy output stabilizes. Optimize conditions such as lamp position, burner head alignment, fuel and oxidant flow rates, etc. See the SOP or specific instrument manuals for details. Instrumental parameters for the Perkin-Elmer Model 603 used in the validation of this method are given in Attachment 1.

3.10.2. Aspirate and measure the absorbance of a standard solution of cadmium. The standard concentration should be within the linear range. For the instrumentation used in the validation of this method a 2 µg/mL cadmium standard gives a net absorbance reading of about 0.350 abs. units (see Section 1.5.5.) when the instrument and the source lamp are performing to manufacturer specifications.

3.10.3. To increase instrument response, scale expand the absorbance reading of the aspirated 2 µg/mL working standard approximately four times. Increase the integration time to at least 3 seconds to reduce signal noise.

3.10.4. Autozero the instrument while aspirating a deionized water blank. Monitor the variation in the baseline absorbance reading (baseline noise) for a few minutes to insure that the instrument, source lamp and associated equipment are in good operating condition.

3.10.5. Aspirate the working standards and samples directly into the flame and record their absorbance readings. Aspirate the deionized water blank immediately after every standard or sample to correct for and monitor any baseline drift and noise. Record the baseline absorbance reading of each deionized water blank. Label each standard and sample reading and its accompanying baseline reading.

3.10.6. It is recommended that the entire series of working standards be analyzed at the beginning and end of the analysis of a set of samples to establish a concentration-response curve, ensure that the standard readings agree with each other and are reproducible. Also, analyze a working standard after every five or six samples to monitor the performance of the spectrophotometer. Standard readings should agree within ±10 to 15% of the readings obtained at the beginning of the analysis.

3.10.7. Bracket the sample readings with standards during the analysis. If the absorbance reading of a sample is above the absorbance reading of the highest working standard, dilute the sample with diluting solution and reanalyze. Use the appropriate dilution factor in the calculations.

3.10.8. Repeat the analysis of approximately 10% of the samples for a check of precision.

3.10.9. If possible, analyze quality control samples from an independent source as a check on analytical recovery and precision.

3.10.10. Record the final instrument settings at the end of the analysis. Date and label the output.

3.11. AAS–HGA Analysis

Initially analyze all of the air samples for their cadmium content by flame atomic absorption spectroscopy (AAS) according to the instructions given in Section 3.10. If the concentration of cadmium in a sample solution is less than three times the quantitative detection limit [0.04 µg/mL (40 ng/mL) for the instrumentation used in the validation] and the sample results are to be averaged with other samples for TWA calculations, proceed with the AAS–HGA analysis of the sample as described below.

3.11.1. Set up the atomic absorption spectrophotometer and HGA for flameless atomic absorption analysis of cadmium according to the SOP (5.9.) or the manufacturer's operational instructions and allow the instrument to stabilize. The graphite furnace atomizer is equipped with a pyrolytically coated graphite tube containing a pyrolytic platform. For the source lamp, use a cadmium hollow cathode or electrodeless discharge lamp operated at the manufacturer's recommended setting for graphite furnace operation. The Zeeman background corrector and EDL are recommended for use with the L'vov platform. Instrumental parameters for the Perkin-Elmer Model 5100 spectrophotometer and Zeeman HGA–600 graphite furnace used in the validation of this method are given in Attachment 2.

3.11.2. Optimize the energy reading of the spectrophotometer at 228.8 nm by adjusting the lamp position and the wavelength according to the manufacturer's instructions.

3.11.3. Set up the autosampler to inject a 5-µL aliquot of the working standard, sample or reagent blank solution onto the L'vov platform along with a 10-µL overlay of the matrix modifier.

3.11.4. Analyze the reagent blank (diluting solution, Section 3.5.6.) and then autozero the instrument before starting the analysis of a set of samples. It is recommended that the reagent blank be analyzed several times during the analysis to assure the integrated absorbance (peak area) reading remains at or near zero.

3.11.5. Analyze a working standard approximately midway in the linear portion of the working standard range two or three times to check for reproducibility and sensitivity (see sections 1.5.5. and 1.5.6.) before starting the analysis of samples. Calculate the experimental characteristic mass value from the average integrated absorbance reading and injection volume of the analyzed working standard. Compare this value to the manufacturer's suggested value as a check of proper instrument operation.

3.11.6. Analyze the reagent blank, working standard, and sample solutions. Record and label the peak area (abs-sec) readings and the peak and background peak profiles on the printer/plotter.

3.11.7. It is recommended the entire series of working standards be analyzed at the beginning and end of the analysis of a set of samples. Establish a concentration-response curve and ensure standard readings agree with each other and are reproducible. Also, analyze a working standard after every five or six samples to monitor the performance of the system. Standard readings should agree within ±15% of the readings obtained at the beginning of the analysis.

3.11.8. Bracket the sample readings with standards during the analysis. If the peak area reading of a sample is above the peak area reading of the highest working standard, dilute the sample with the diluting solution and reanalyze. Use the appropriate dilution factor in the calculations.

3.11.9. Repeat the analysis of approximately 10% of the samples for a check of precision.

3.11.10. If possible, analyze quality control samples from an independent source as a check of analytical recovery and precision.

3.11.11. Record the final instrument settings at the end of the analysis. Date and label the output.

3.12. Calculations

Note: Standards used for HGA analysis are in ng/mL. Total amounts of cadmium from calculations will be in ng (not µg) unless a prior conversion is made.

3.12.1. Correct for baseline drift and noise in flame AAS analysis by subtracting each baseline absorbance reading from its corresponding working standard or sample absorbance reading to obtain the net absorbance reading for each standard and sample.

3.12.2. Use a least squares regression program to plot a concentration-response curve of net absorbance reading (or peak area for HGA analysis) versus concentration (µg/mL or ng/mL) of cadmium in each working standard.

3.12.3. Determine the concentration (µg/mL or ng/mL) of cadmium in each sample from the resulting concentration-response curve. If the concentration of cadmium in a sample solution is less than three times the quantitative detection limit [0.04 µg/mL (40 ng/mL) for the instrumentation used in the validation of the method] and if consecutive samples were taken on one employee and the sample results are to be averaged with other samples to determine a single TWA, reanalyze the sample by AAS–HGA as described in Section 3.11. and report the AAS–HGA analytical results.

3.12.4. Calculate the total amount (µg or ng) of cadmium in each sample from the sample solution volume (mL) :

W=(C)(sample vol, mL)(DF)

Where:

W=Total cadmium in sample

C=Calculated concentration of cadmium

DF=Dilution Factor (if applicable)

3.12.5. Make a blank correction for each air sample by subtracting the total amount of cadmium in the corresponding blank sample from the total amount of cadmium in the sample.

3.12.6. Calculate the concentration of cadmium in an air sample (mg/m³ or µg/m³) by using one of the following equations:

$mg/m^3=W_{bc}/(\text{Air vol sampled, L})$

or

$\mu g/m^3=(W_{bc})(1{,}000\ ng/\mu g)/(\text{Air vol sampled, L})$

Where:

W_{bc}=blank corrected total µg cadmium in the sample. (1µg=1,000 ng)

4. Backup Data

4.1. Introduction

4.1.1. The purpose of this evaluation is to determine the analytical method recovery, working standard range, and qualitative and quantitative detection limits of the two atomic absorption analytical techniques included in this method. The evaluation consisted of the following experiments:

1. An analysis of 24 samples (six samples each at 0.1, 0.5, 1 and 2 times the TWA–PEL) for the analytical method recovery study of the flame AAS analytical technique.

2. An analysis of 18 samples (six samples each at 0.5, 1 and 2 times the Action Level TWA–PEL) for the analytical method recovery study of the AAS–HGA analytical technique.

3. Multiple analyses of the reagent blank and a series of standard solutions to determine the working standard range and the qualitative and quantitative detection limits for both atomic absorption analytical techniques.

4.1.2. The analytical method recovery results at all test levels were calculated from

concentration-response curves and statistically examined for outliers at the 99% confidence level. Possible outliers were determined using the Treatment of Outliers test (5.10.). In addition, the sample results of the two analytical techniques, at 0.5, 1.0 and 2.0 times their target concentrations, were tested for homogeneity of variances also at the 99% confidence level. Homogeneity of the coefficients of variation was determined using the Bartlett's test (5.11.). The overall analytical error (OAE) at the 95% confidence level was calculated using the equation (5.12.):

$OAE=\pm[|Bias|+(1.96)(CV_1(pooled))(100\%)]$

4.1.3. A derivation of the International Union of Pure and Applied Chemistry (IUPAC) detection limit equation (5.13.) was used to determine the qualitative and quantitative detection limits for both atomic absorption analytical techniques:

$C_{ld}=k(sd)/m$ (Equation 1)

Where:

C_{ld}=the smallest reliable detectable concentration an analytical instrument can determine at a given confidence level.

k=3 for the Qualitative Detection Limit at the 99.86% Confidence Level

=10 for the Quantitative Detection Limit at the 99.99% Confidence Level.

sd=standard deviation of the reagent blank (Rbl) readings.

m=analytical sensitivity or slope as calculated by linear regression.

4.1.4. Collection efficiencies of metallic fume and dust atmospheres on 0.8-µm mixed cellulose ester membrane filters are well documented and have been shown to be excellent (5.11.). Since elemental cadmium and the cadmium component of cadmium compounds are nonvolatile, stability studies of cadmium spiked MCEF samples were not performed.

4.2. Equipment

4.2.1. A Perkin-Elmer (PE) Model 603 spectrophotometer equipped with a manual gas control system, a stainless steel nebulizer, a burner mixing chamber, a flow spoiler and a 10 cm. (one-slot) burner head was used in the experimental validation of the flame AAS analytical technique. A PE cadmium hollow cathode lamp, operated at the manufacturer's recommended current setting for continuous operation (4 mA), was used as the source lamp. Instrument parameters are listed in Attachment 1.

4.2.2. A PE Model 5100 spectrophotometer, Zeeman HGA–600 graphite furnace atomizer and AS–60 HGA autosampler were used in the experimental validation of the AAS–HGA analytical technique. The spectrophotometer was equipped with a PE Series 7700 professional computer and Model PR–310 printer. A PE System 2 cadmium electrodeless discharge lamp, operated at the manufacturer's recommended current setting for modulated operation (170 mA), was used as the source lamp. Instrument parameters are listed in Attachment 2.

4.3. Reagents

4.3.1. J.T. Baker Chem. Co. (Analyzed grade) concentrated nitric acid, 69.0–71.0%, and concentrated hydrochloric acid, 36.5–38.0%, were used to prepare the samples and standards.

4.3.2. Ammonium phosphate, monobasic, $NH_4H_2PO_4$ and magnesium nitrate, $Mg(NO_3)_2$ $6H_2O$, both manufactured by the Mallinckrodt Chem. Co., were used to prepare the matrix modifier for AAS–HGA analysis.

4.4. Standard Preparation for Flame AAS Analysis

4.4.1. Dilute stock solutions: Prepared 0.01, 0.1, 1, 10 and 100 µg/mL cadmium standard stock solutions by making appropriate serial dilutions of a commercially available 1,000 µg/mL cadmium standard stock solution (RICCA Chemical Co., Lot# A102) with the diluting solution (4% HNO_3, 0.4% HCl).

4.4.2. Analyzed Standards: Prepared cadmium standards in the range of 0.001 to 2.0 µg/mL by pipetting 2 to 10 mL of the appropriate dilute cadmium stock solution into a 100-mL volumetric flask and diluting to volume with the diluting solution. (See Section 3.7.2.)

4.5. Standard Preparation for AAS–HGA Analysis

4.5.1. Dilute stock solutions: Prepared 1, 10, 100 and 1,000 ng/mL cadmium standard stock solutions by making appropriate serial dilutions of a commercially available 1,000 µg/mL cadmium standard stock solution (J.T Baker Chemical Co., Instra-analyzed, Lot# D22642) with the diluting solution (4% HNO_3, 0.4% HCl).

4.5.2. Analyzed Standards: Prepared cadmium standards in the range of 0.1 to 40 ng/mL by pipetting 2 to 10 mL of the appropriate dilute cadmium stock solution into a 100-mL volumetric flask and diluting to volume with the diluting solution. (See Section 3.8.2.)

4.6. Detection Limits and Standard Working Range for Flame AAS Analysis

4.6.1. Analyzed the reagent blank solution and the entire series of cadmium standards in the range of 0.001 to 2.0 µg/mL three to six times according to the instructions given in Section 3.10. The diluting solution (4% HNO_3, 0.4% HCl) was used as the reagent blank. The integration time on the PE 603 spectrophotometer was set to 3.0 seconds and a four-fold expansion of the absorbance reading of the 2.0 µg/mL cadmium standard was made prior to analysis. The 2.0 µg/mL standard gave a net absorbance reading of 0.350 abs. units prior to expansion in agreement with the manufacturer's specifications (5.6.).

4.6.2. The net absorbance readings of the reagent blank and the low concentration Cd standards from 0.001 to 0.1 µg/mL and the statistical analysis of the results are shown in Table I. The standard deviation, sd, of the six net absorbance readings of the reagent blank is 1.05 abs. units. The slope, m, as calculated by a linear regression plot of the net absorbance readings (shown in Table II) of the 0.02 to 1.0 µg/mL cadmium standards versus their concentration is 772.7 abs. units/(µg/mL).

4.6.3. If these values for sd and the slope, m, are used in Eqn. 1 (Sect. 4.1.3), the qualitative and quantitative detection limits as determined by the IUPAC Method are:

C_{ld}=(3)(1.05 abs. units)/(772.7 abs. units/(µg/mL))

= 0.0041 µg/mL for the qualitative detection limit.

C_{ld}=(10)(1.05 abs. units)/(772.7 abs. units/µg/mL))

=0.014 µg/mL for the quantitative detection limit.

The qualitative and quantitative detection limits for the flame AAS analytical technique are 0.041 µg and 0.14 µg cadmium, respectively, for a 10 mL solution volume. These correspond, respectively, to 0.2 µg/m³ and 0.70 µg/m³ for a 200 L air volume.

4.6.4. The recommended Cd standard working range for flame AAS analysis is 0.02 to 2.0 µg/mL. The net absorbance readings of the reagent blank and the recommended working range standards and the statistical analysis of the results are shown in Table II. The standard of lowest concentration in the working range, 0.02 µg/mL, is slightly greater than the calculated quantitative detection limit, 0.014 µg/mL. The standard of highest concentration in the working range, 2.0 µg/mL, is at the upper end of the linear working range suggested by the manufacturer (5.6.). Although the standard net absorbance readings are not strictly linear at concentrations above 0.5 µg/mL, the deviation from linearity is only about 10% at the upper end of the recommended standard working range. The deviation from linearity is probably caused by the four-fold expansion of the signal suggested in the method. As shown in Table II, the precision of the standard net absorbance readings are excellent throughout the recommended working range; the relative standard deviations of the readings range from 0.009 to 0.064.

4.7. Detection Limits and Standard Working Range for AAS–HGA Analysis

4.7.1. Analyzed the reagent blank solution and the entire series of cadmium standards in the range of 0.1 to 40 ng/mL according to the instructions given in Section 3.11. The diluting solution (4% HNO_3, 0.4% HCl) was used as the reagent blank. A fresh aliquot of the reagent blank and of each standard was used for every analysis. The experimental characteristic mass value was 0.41 pg, calculated from the average peak area (abs-sec) reading of the 5 ng/mL standard which is approximately midway in the linear portion of the working standard range. This agreed within 20% with the characteristic mass value, 0.35 pg, listed by the manufacturer of the instrument (5.2.).

4.7.2. The peak area (abs-sec) readings of the reagent blank and the low concentration Cd standards from 0.1 to 2.0 ng/mL and statistical analysis of the results are shown in Table III. Five of the reagent blank peak area readings were zero and the sixth reading was 1 and was an outlier. The near lack of a blank signal does not satisfy a strict interpretation of the IUPAC method for determining the detection limits. Therefore, the standard deviation of the six peak area readings of the 0.2 ng/mL cadmium standard, 0.75 abs-sec, was used to calculate the detection limits by the IUPAC method. The slope, m, as

calculated by a linear regression plot of the peak area (abs-sec) readings (shown in Table IV) of the 0.2 to 10 ng/mL cadmium standards versus their concentration is 51.5 abs-sec/(ng/mL).

4.7.3. If 0.75 abs-sec (sd) and 51.5 abs-sec/(ng/mL) (m) are used in Eqn. 1 (Sect. 4.1.3.), the qualitative and quantitative detection limits as determined by the IUPAC method are:

C_{ld}= (3)(0.75 abs-sec)/(51.5 abs-sec/(ng/mL) = 0.044 ng/mL for the qualitative detection limit.

C_{ld}= (10)(0.75 abs-sec)/(51.5 abs-sec/(ng/mL) = 0.15 ng/mL for the quantitative detection limit.

The qualitative and quantitative detection limits for the AAS-HGA analytical technique are 0.44 ng and 1.5 ng cadmium, respectively, for a 10 mL solution volume. These correspond, respectively, to 0.007 µg/m³ and 0.025 µg/m³ for a 60 L air volume.

4.7.4. The peak area (abs-sec) readings of the Cd standards from 0.2 to 40 ng/mL and the statistical analysis of the results are given in Table IV. The recommended standard working range for AAS-HGA analysis is 0.2 to 20 ng/mL. The standard of lowest concentration in the recommended working range is slightly greater than the calculated quantitative detection limit, 0.15 ng/mL. The deviation from linearity of the peak area readings of the 20 ng/mL standard, the highest concentration standard in the recommended working range, is approximately 10%. The deviations from linearity of the peak area readings of the 30 and 40 ng/mL standards are significantly greater than 10%. As shown in Table IV, the precision of the peak area readings are satisfactory throughout the recommended working range; the relative standard deviations of the readings range from 0.025 to 0.083.

4.8. Analytical Method Recovery for Flame AAS Analysis

4.8.1. Four sets of spiked MCEF samples were prepared by injecting 20 µL of 10, 50, 100 and 200 µg/mL dilute cadmium stock solutions on 37 mm diameter filters (part no. AAWP 037 00, Millipore Corp., Bedford, MA) with a calibrated micropipet. The dilute stock solutions were prepared by making appropriate serial dilutions of a commercially available 1,000 µg/mL cadmium standard stock solution (RICCA Chemical Co., Lot# A102) with the diluting solution (4% HNO_3, 0.4% HCl). Each set contained six samples and a sample blank. The amount of cadmium in the prepared sets were equivalent to 0.1, 0.5, 1.0 and 2.0 times the TWA PEL target concentration of 5 µg/m³ for a 400 L air volume.

4.8.2. The air-dried spiked filters were digested and analyzed for their cadmium content by flame atomic absorption spectroscopy (AAS) following the procedure described in Section 3. The 0.02 to 2.0µ g/mL cadmium standards (the suggested working range) were used in the analysis of the spiked filters.

4.8.3. The results of the analysis are given in Table V. One result at 0.5 times the TWA PEL target concentration was an outlier and was excluded from statistical analysis. Experimental justification for rejecting it is that the outlier value was probably due to a spiking error. The coefficients of variation for the three test levels at 0.5 to 2.0 times the TWA PEL target concentration passed the Bartlett's test and were pooled.

4.8.4. The average recovery of the six spiked filter samples at 0.1 times the TWA PEL target concentration was 118.2% with a coefficient of variation (CV_1) of 0.128. The average recovery of the spiked filter samples in the range of 0.5 to 2.0 times the TWA target concentration was 104.0% with a pooled coefficient of variation (CV_1) of 0.010. Consequently, the analytical bias found in these spiked sample results over the tested concentration range was +4.0% and the OAE was ±6.0%.

4.9. Analytical Method Recovery for AAS-HGA Analysis

4.9.1. Three sets of spiked MCEF samples were prepared by injecting 15µ L of 5, 10 and 20 µg/mL dilute cadmium stock solutions on 37 mm diameter filters (part no. AAWP 037 00, Millipore Corp., Bedford, MA) with a calibrated micropipet. The dilute stock solutions were prepared by making appropriate serial dilutions of a commercially available certified 1,000 µg/mL cadmium standard stock solution (Fisher Chemical Co., Lot# 913438–24) with the diluting solution (4% HNO_3, 0.4% HCl). Each set contained six samples and a sample blank. The amount of cadmium in the prepared sets were equivalent to 0.5, 1 and 2 times the Action Level TWA target concentration of 2.5 µg/m³ for a 60 L air volume.

4.9.2. The air-dried spiked filters were digested and analyzed for their cadmium content by flameless atomic absorption spectroscopy using a heated graphite furnace atomizer following the procedure described in Section 3. A five-fold dilution of the spiked filter samples at 2 times the Action Level TWA was made prior to their analysis. The 0.05 to 20 ng/mL cadmium standards were used in the analysis of the spiked filters.

4.9.3. The results of the analysis are given in Table VI. There were no outliers. The coefficients of variation for the three test levels at 0.5 to 2.0 times the Action Level TWA PEL passed the Bartlett's test and were pooled. The average recovery of the spiked filter samples was 94.2% with a pooled coefficient of variation (CV_1) of 0.043. Consequently, the analytical bias was −5.8% and the OAE was ±14.2%.

4.10. Conclusions

The experiments performed in this evaluation show the two atomic absorption analytical techniques included in this method to be precise and accurate and have sufficient sensitivity to measure airborne cadmium over a broad range of exposure levels and sampling periods.

5. References

5.1. Slavin, W. Graphite Furnace AAS—A Source Book; Perkin-Elmer Corp., Spectroscopy Div.: Ridgefield, CT , 1984; p. 18 and pp. 83–90.

5.2. Grosser, Z., Ed.; Techniques in Graphite Furnace Atomic Absorption Spectrophotometry; Perkin-Elmer Corp., Spectroscopy Div.: Ridgefield, CT, 1985.

5.3. Occupational Safety and Health Administration Salt Lake Technical Center: Metal and Metalloid Particulate in Workplace Atmospheres (Atomic Absorption) (USDOL/OSHA Method No. ID–121). In OSHA Analytical Methods Manual 2nd ed. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 1991.

5.4. Occupational Safety and Health Administration Salt Lake Technical Center: Metal and Metalloid Particulate in Workplace Atmospheres (ICP) (USDOL/OSHA Method No. ID–125G). In OSHA Analytical Methods Manual 2nd ed. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 1991.

5.5. Windholz, M., Ed.; The Merck Index, 10th ed.; Merck & Co.: Rahway, NJ, 1983.

5.6. Analytical Methods for Atomic Absorption Spectrophotometry, The Perkin-Elmer Corporation: Norwalk, CT, 1982.

5.7 Slavin, W., D.C. Manning, G. Carnrick, and E. Pruszkowska: Properties of the Cadmium Determination with the Platform Furnace and Zeeman Background Correction. Spectrochim. Acta 38B:1157–1170 (1983).

5.8. Occupational Safety and Health Administration Salt Lake Technical Center: Standard Operating Procedure for Atomic Absorption. Salt Lake City, UT: USDOL/OSHA-SLTC, In progress.

5.9. Occupational Safety and Health Administration Salt Lake Technical Center: AAS-HGA Standard Operating Procedure. Salt Lake City, UT: USDOL/OSHA-SLTC, In progress.

5.10. Mandel, J.: Accuracy and Precision, Evaluation and Interpretation of Analytical Results, The Treatment of Outliers. In Treatise On Analytical Chemistry, 2nd ed., Vol.1, edited by I. M. Kolthoff and P J. Elving. New York: John Wiley and Sons, 1978. pp. 282–285.

5.11. National Institute for Occupational Safety and Health: Documentation of the NIOSH Validation Tests by D. Taylor, R. Kupel, and J. Bryant (DHEW/NIOSH Pub. No 77–185). Cincinnati, OH: National Institute for Occupational Safety and Health, 1977

5.12. Occupational Safety and Health Administration Analytical Laboratory: Precision and Accuracy Data Protocol for Laboratory Validations. In OSHA Analytical Methods Manual 1st ed. Cincinnati, OH: American Conference of Governmental Industrial Hygienists (Pub. No. ISBN: 0–936712–66–X), 1985.

5.13. Long, G.L. and J.D. Winefordner: Limit of Detection—A Closer Look at the IUPAC Definition. Anal.Chem. 55:712A–724A (1983).

5.14. American Conference of Governmental Industrial Hygienists: Documentation of Threshold Limit Values and Biological Exposure Indices. 5th ed. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 1986

TABLE I.—CD DETECTION LIMIT STUDY

[Flame AAS Analysis]

STD (µg/mL)	Absorbance reading at 228.8 nm		Statistical analysis
Reagent blank	5	2	n=6.
	4	3	mean=3.50.
	4	3	std dev=1.05.
			CV=0.30.
0.001	6	6	n=6.
	2	4	mean=5.00.
	6	6	std dev=1.67.
			CV=0.335.
0.002	5	7	n=6.
	7	3	mean=5.50.
	7	4	std dev=1.76.
			CV=0.320.
0.005	7	7	n=6.
	8	8	mean=7.33.
	8	6	std dev=0.817.
			CV=0.111.
0.010	10	9	n=6.
	10	13	mean=10.3.
	10	10	std dev=1.37.
			CV=0.133.
0.020	20	23	n=6.
	20	22	mean=20.8.
	20	20	std dev=1.33.
			CV=0.064.
0.050	42	42	n=6.
	42	42	mean=42.5.
	42	45	std dev=1.22.
			CV=0.029.
0.10		84	n=3.
		80	mean=82.3.
		83	std dev=2.08.
			CV=0.025.

TABLE II.—CD STANDARD WORKING RANGE STUDY

[Flame AAS Analysis]

STD (µg/mL)	Absorbance reading at 228.8 nm		Statistical analysis
Reagent blank	5	2	n=6.
	4	3	mean=3.50.
	4	3	std dev=1.05.
			CV=0.30.
0.020	20	23	n=6.
	20	22	mean=20.8.
	20	20	std dev=1.33.
			CV=0.064.
0.050	42	42	n=6.
	42	42	mean=42.5.
	42	45	std dev=1.22.
			CV=0.029.
0.10		84	n=3.
		80	mean=82.3.
		83	std dev=2.08.
			CV=0.025.
0.20		161	n=3.
		161	mean=160.0.
		158	std dev=1.73.
			CV=0.011.
0.50		391	n=3.
		389	mean=391.0.
		393	std dev=2.00.
			CV=0.005.
1.00		760	n=3.
		748	mean=753.3.
		752	std dev=6.11.
			CV=0.008.
2.00		1416	n=3.

TABLE II.—CD STANDARD WORKING RANGE STUDY—Continued

[Flame AAS Analysis]

STD (µg/mL)	Absorbance reading at 228.8 nm	Statistical analysis
	1426 1401	mean=1414.3. std dev=12.6. CV=0.009.

TABLE III.—CD DETECTION LIMIT STUDY

[AAS–HGA Analysis]

STD (ng/mL)	Peak area readings × 10^3 at 228.8 nm	Statistical analysis
Reagent blank	0 0 0 1 0 0	n=6. mean=0.167. std dev=0.41. CV=2.45.
0.1	8 6 5 7 13 7	n=6. mean=7.7. std dev=2.8. CV=0.366.
0.2	11 13 11 12 12 12	n=6. mean=11.8. std dev=0.75. CV=0.064.
0.5	28 33 26 28 28 30	n=6. mean=28.8. std dev=2.4. CV=0.083.
1.0	52 55 56 58 54 54	n=6. mean=54.8. std dev=2.0. CV=0.037.
2.0	101 112 110 110 110 110	n=6. mean=108.8. std dev=3.9. CV=0.036.

TABLE IV.—CD STANDARD WORKING RANGE STUDY

[AAS-HGA Analysis]

STD (ng/mL)	Peak area readings × 10^3 at 228.8 nm	Statistical analysis
0.2	11 13 11 12 12 12	n=6. mean=11.8. std dev=0.75. CV=0.064.
0.5	28 33 26 28 28 30	n=6. mean=28.8. std dev=2.4. CV=0.083.
1.0	52 55 56 58 54 54	n=6. mean=54.8. std dev=2.0. CV=0.037.
2.0	101 112 110 110 110 110	n=6. mean=108.8. std dev=3.9. CV=0.036.
5.0	247 265 268 275 259 279	n=6. mean=265.5. std dev=11.5. CV=0.044.
10.0	495 520 523 513 516 533	n=6. mean=516.7. std dev=12.7. CV=0.025.
20.0	950 953	n=6.

TABLE IV.—CD STANDARD WORKING RANGE STUDY—Continued

[AAS-HGA Analysis]

STD (ng/mL)	Peak area readings × 10^3 at 228.8 nm		Statistical analysis
	951	958	mean=941.8.
	949	890	std dev=25.6.
			CV=0.027.
30.0	1269	1291	n=6.
	1303	1307	mean=1293.
	1295	1290	std dev=13.3.
			CV=0.010.
40.0	1505	1567	n=6.
	1535	1567	mean=1552.
	1566	1572	std dev=26.6.
			CV=0.017.

TABLE V.—ANALYTICAL METHOD RECOVERY

[Flame AAS Analysis]

Test level	0.5×	Percent rec.	µg taken	1.0×	Percent rec.	µg taken	2.0×	Percent rec.
µg taken	µg found			µg found			µg found	
1.00	1.0715	107.2	2.00	2.0688	103.4	4.00	4.1504	103.8
1.00	1.0842	108.4	2.00	2.0174	100.9	4.00	4.1108	102.8
1.00	1.0842	108.4	2.00	2.0431	102.2	4.00	4.0581	101.5
1.00	*1.0081	*100.8	2.00	2.0431	102.2	4.00	4.0844	102.1
1.00	1.0715	107.2	2.00	2.0174	100.9	4.00	4.1504	103.8
1.00	1.0842	108.4	2.00	2.0045	100.2	4.00	4.1899	104.7
n=			5		6			6
mean=			107.9		101.6			103.1
std dev=			0.657		1.174			1.199
CV_1=			0.006		0.011			0.012
			CV_1 (pooled)=0.010					

*Rejected as an outlier—this value did not pass the outlier T-test at the 99% confidence level.

Test level	0.1×	Percent rec.
µg taken	µg found	
0.200	0.2509	125.5
0.200	0.2509	125.5
0.200	0.2761	138.1
0.200	0.2258	112.9
0.200	0.2258	112.9
0.200	0.1881	94.1
n=		6
mean=		118.2
std dev=		15.1
CV_1=		0.128

TABLE VI.—ANALYTICAL METHOD RECOVERY

[AAS–HGA analysis]

Test level	0.5×	Percent rec.	ng taken	1.0×	Percent rec.	ng taken	2.0×	Percent rec.
ng taken	ng found			ng found			ng found	
75	71.23	95.0	150	138.00	92.0	300	258.43	86.1
75	71.47	95.3	150	138.29	92.2	300	258.46	86.2
75	70.02	93.4	150	136.30	90.9	300	280.55	93.5
75	77.34	103.1	150	146.62	97.7	300	288.34	96.1
75	78.32	104.4	150	145.17	96.8	300	261.74	87.2
75	71.96	95.9	150	144.88	96.6	300	277.22	92.4

n=	6	6	6
mean=	97.9	94.4	90.3
std dev=	4.66	2.98	4.30
CV_1=	0.048	0.032	0.048
	CV_1(pooled)=0.043		

Attachment 1

Instrumental Parameters for Flame AAS Analysis

Atomic Absorption Spectrophotometer (Perkin-Elmer Model 603)

Flame: Air/Acetylene—lean, blue
Oxidant Flow: 55
Fuel Flow: 32
Wavelength: 228.8 nm
Slit: 4 (0.7 nm)
Range: UV
Signal: Concentration (4 exp)
Integration Time: 3 sec

Attachment 2

Instrumental Parameters for HGA Analysis

Atomic Absorption Spectrophotometer (Perkin-Elmer Model 5100)

Signal Type: Zeeman AA
Slitwidth: 0.7 nm
Wavelength: 228.8 nm
Measurement: Peak Area
Integration Time: 6.0 sec
BOC Time: 5 sec
BOC=Background Offset Correction.

ZEEMAN GRAPHITE FURNACE (PERKIN-ELMER MODEL HGA–600)

Step	Ramp time (sec)	Hold time (sec)	Temp. (°C)	Argon flow (mL/min)	Read (sec)
1) Predry	5	10	90	300	.....
2) Dry	30	10	140	300	.....
3) Char	10	20	900	300	.....
4) Cool Down	1	8	30	300	.....
5) Atomize	0	5	1600	0	−1
6) Burnout	1	8	2500	300	.....

Appendix F to § 1915.1027—Nonmandatory Protocol for Biological Monitoring

1.00 Introduction

Under the final OSHA cadmium rule (29 CFR part 1910), monitoring of biological specimens and several periodic medical examinations are required for eligible employees. These medical examinations are to be conducted regularly, and medical monitoring is to include the periodic analysis of cadmium in blood (CDB), cadmium in urine (CDU) and beta-2-microglobulin in urine (B2MU). As CDU and B2MU are to be normalized to the concentration of creatinine in urine (CRTU), then CRTU must be analyzed in conjunction with CDU and B2MU analyses.

The purpose of this protocol is to provide procedures for establishing and maintaining the quality of the results obtained from the analyses of CDB, CDU and B2MU by commercial laboratories. Laboratories conforming to the provisions of this nonmandatory protocol shall be known as "participating laboratories." The biological monitoring data from these laboratories will be evaluated by physicians responsible for biological monitoring to determine the conditions under which employees may continue to work in locations exhibiting airborne-cadmium concentrations at or above defined actions levels (see paragraphs (l)(3) and (l)(4) of the final rule). These results also may be used to support a decision to remove workers from such locations.

Under the medical monitoring program for cadmium, blood and urine samples must be collected at defined intervals from workers by physicians responsible for medical monitoring; these samples are sent to commerical laboratories that perform the required analyses and report results of these analyses to the responsible physicians. To ensure the accuracy and reliability of these laboratory analyses, the laboratories to which samples are submitted should participate in an ongoing and efficacious proficiency testing program. Availability of proficiency testing programs may vary with the analyses performed.

To test proficiency in the analysis of CDB, CDU and B2MU, a laboratory should participate either in the interlaboratory comparison program operated by the Centre de Toxicologie du Quebec (CTQ) or an equivalent program. (Currently, no laboratory in the U.S. performs proficiency testing on CDB, CDU or B2MU.) Under this program, CTQ sends participating laboratories 18 samples of each analyte (CDB, CDU and/or B2MU) annually for analysis. Participating laboratories must return the results of these analyses to CTQ within four to five weeks after receiving the samples.

The CTQ program pools analytical results from many participating laboratories to derive consensus mean values for each of the samples distributed. Results reported by each laboratory then are compared against these consensus means for the analyzed samples to determine the relative performance of each laboratory. The proficiency of a participating laboratory is a function of the extent of agreement between results submitted by the participating laboratory and the consensus values for the set of samples analyzed.

Proficiency testing for CRTU analysis (which should be performed with CDU and B2MU analyses to evaluate the results properly) also is recommended. In the U.S., only the College of American Pathologists (CAP) currently conducts CRTU proficiency testing; participating laboratories should be accredited for CRTU analysis by the CAP.

Results of the proficiency evaluations will be forwarded to the participating laboratory by the proficiency-testing laboratory, as well as to physicians designated by the participating laboratory to receive this information. In addition, the participating laboratory should, on request, submit the results of their internal Quality Assurance/Quality Control (QA/QC) program for each analytic procedure (i.e., CDB, CDU and/or B2MU) to physicians designated to receive the proficiency results. For participating laboratories offering CDU and/or B2MU analyses, QA/QC documentation also should be provided for CRTU analysis. (Laboratories should provide QA/QC information regarding CRTU analysis directly to the requesting physician if they perform the analysis in-house; if CRTU analysis is performed by another laboratory under contract, this information should be provided to the physician by the contract laboratory.)

QA/QC information, along with the actual biological specimen measurements, should be provided to the responsible physician using standard formats. These physicians then may collate the QA/QC information with proficiency test results to compare the relative performance of laboratories, as well as to facilitate evaluation of the worker monitoring data. This information supports decisions made by the physician with regard to the biological monitoring program, and for mandating medical removal.

This protocol describes procedures that may be used by the responsible physicians to identify laboratories most likely to be proficient in the analysis of samples used in the biological monitoring of cadmium; also provided are procedures for record keeping and reporting by laboratories participating in proficiency testing programs, and recommendations to assist these physicians in interpreting analytical results determined

by participating laboratories. As the collection and handling of samples affects the quality of the data, recommendations are made for these tasks. Specifications for analytical methods to be used in the medical monitoring program are included in this protocol as well.

In conclusion, this document is intended as a supplement to characterize and maintain the quality of medical monitoring data collected under the final cadmium rule promulgated by OSHA (29 CFR part 1910). OSHA has been granted authority under the Occupational Safety and Health Act of 1970 to protect workers from the effects of exposure to hazardous substances in the work place and to mandate adequate monitoring of workers to determine when adverse health effects may be occurring. This nonmandatory protocol is intended to provide guidelines and recommendations to improve the accuracy and reliability of the procedures used to analyze the biological samples collected as part of the medical monitoring program for cadmium.

2.0 Definitions

When the terms below appear in this protocol, use the following definitions.

Accuracy: A measure of the bias of a data set. Bias is a systematic error that is either inherent in a method or caused by some artifact or idiosyncracy of the measurement system. Bias is characterized by a consistent deviation (positive or negative) in the results from an accepted reference value.

Arithmetic Mean: The sum of measurements in a set divided by the number of measurements in a set.

Blind Samples: A quality control procedure in which the concentration of analyte in the samples should be unknown to the analyst at the time that the analysis is performed.

Coefficient of Variation: The ratio of the standard deviation of a set of measurements to the mean (arithmetic or geometric) of the measurements.

Compliance Samples: Samples from exposed workers sent to a participating laboratory for analysis.

Control Charts: Graphic representations of the results for quality control samples being analyzed by a participating laboratory.

Control Limits: Statistical limits which define when an analytic procedure exceeds acceptable parameters; control limits provide a method of assessing the accuracy of analysts, laboratories, and discrete analytic runs.

Control Samples: Quality control samples.

F/T: The measured amount of an analyte divided by the theoretical value (defined below) for that analyte in the sample analyzed; this ratio is a measure of the recovery for a quality control sample.

Geometric Mean: The natural antilog of the mean of a set of natural log-transformed data.

Geometric Standard Deviation: The antilog of the standard deviation of a set of natural log-transformed data.

Limit of Detection: Using a predefined level of confidence, this is the lowest measured value at which some of the measured material is likely to have come from the sample.

Mean: A central tendency of a set of data; in this protocol, this mean is defined as the *arithmetic mean* (see definition of *arithmetic mean* above) unless stated otherwise.

Performance: A measure of the overall quality of data reported by a laboratory.

Pools: Groups of quality-control samples to be established for each target value (defined below) of an analyte. For the protocol provided in attachment 3, for example, the theoretical value of the quality control samples of the pool must be within a range defined as plus or minus (±) 50% of the target value. Within each analyte pool, there must be quality control samples of at least 4 theoretical values.

Precision: The extent of agreement between repeated, independent measurements of the same quantity of an analyte.

Proficiency: The ability to satisfy a specified level of analyte performance.

Proficiency Samples: Specimens, the values of which are unknown to anyone at a participating laboratory, and which are submitted by a participating laboratory for proficiency testing.

Quality or Data Quality: A measure of the confidence in the measurement value.

Quality Control (QC) Samples: Specimens, the value of which is unknown to the analyst, but is known to the appropriate QA/QC personnel of a participating laboratory; when used as part of a laboratory QA/QC program, the theoretical values of these samples should not be known to the analyst until the analyses are complete. QC samples are to be run in sets consisting of one QC sample from each pool (see definition of "pools" above).

Sensitivity: For the purposes of this protocol, the limit of detection.

Standard Deviation: A measure of the distribution or spread of a data set about the mean; the standard deviation is equal to the positive square root of the variance, and is expressed in the same units as the original measurements in the data set.

Standards: Samples with values known by the analyst and used to calibrate equipment and to check calibration throughout an analytic run. In a laboratory QA/QC program, the values of the standards must exceed the values obtained for compliance samples such that the lowest standard value is near the limit of detection and the highest standard is higher than the highest compliance sample or QC sample. Standards of at least three different values are to be used for calibration, and should be constructed from at least 2 different sources.

Target Value: Those values of CDB, CDU or B2MU which trigger some action as prescribed in the medical surveillance section of the regulatory text of the final cadmium rule. For CDB, the target values are 5, 10, and 15 µg/l. For CDU, the target values are 3, 7, and 15 µg/g CRTU. For β_2MU, the target values are 300, 750, and 1500 µg/g CRTU. (Note that target values may vary as a function of time.)

Theoretical Value (or Theoretical Amount): The reported concentration of a quality-control sample (or calibration standard) derived from prior characterizations of the sample.

Value or Measurement Value: The numerical result of a measurement.

Variance: A measure of the distribution or spread of a data set about the mean; the variance is the sum of the squares of the differences between the mean and each discrete measurement divided by one less than the number of measurements in the data set.

3.0 Protocol

This protocol provides procedures for characterizing and maintaining the quality of analytic results derived for the medical monitoring program mandated for workers under the final cadmium rule.

3.1 Overview

The goal of this protocol is to assure that medical monitoring data are of sufficient quality to facilitate proper interpretation. The data quality objectives (DQOs) defined for the medical monitoring program are summarized in Table 1. Based on available information, the DQOs presented in Table 1 should be achievable by the majority of laboratories offering the required analyses commercially; OSHA recommends that only laboratories meeting these DQOs be used for the analysis of biological samples collected for monitoring cadmium exposure.

TABLE 1.—RECOMMENDED DATA QUALITY OBJECTIVES (DQOS) FOR THE CADMIUM MEDICAL MONITORING PROGRAM

Analyte/concentration pool	Limit of detection	Precision (CV) (%)	Accuracy
Cadmium in blood	0.5 µg/l		±1 µg/l or 15% of the mean.
≤2 µg/l		40	
>2 µg/l		20	
Cadmium in urine	0.5 µg/g creatinine		±1 µg/l or 15% of the mean.
≤2 µg/l creatinine		40	
>2 µg/l creatinine		20	
β-2-microglobulin in urine: 100 µg/g creatine	100 µg/g creatinine	5	±15% of the mean.

To satisfy the DQOs presented in Table 1, OSHA provides the following guidelines:

1. Procedures for the collection and handling of blood and urine are specified (Section 3.4.1 of this protocol);

2. Preferred analytic methods for the analysis of CDB, CDU and B2MU are defined (and a method for the determination of CRTU also is specified since CDU and B2MU results are to be normalized to the level of CRTU).

3. Procedures are described for identifying laboratories likely to provide the required analyses in an accurate and reliable manner;

4. These guidelines (Sections 3.2.1 to 3.2.3, and Section 3.3) include recommendations regarding internal QA/QC programs for participating laboratories, as well as levels of proficiency through participation in an interlaboratory proficiency program;

5. Procedures for QA/QC record keeping (Section 3.3.2), and for reporting QC/QA results are described (Section 3.3.3); and,

6. Procedures for interpreting medical monitoring results are specified (Section 3.4.3).

Methods recommended for the biological monitoring of eligible workers are:

1. The method of Stoeppler and Brandt (1980) for CDB determinations (limit of detection: 0.5 µg/l);

2. The method of Pruszkowska et al. (1983) for CDU determinations (limit of detection: 0.5 µg/l of urine); and,

3. The Pharmacia Delphia test kit (Pharmacia 1990) for the determination of B2MU (limit of detection: 100 µg/l urine).

Because both CDU and B2MU should be reported in µg/g CRTU, an independent determination of CRTU is recommended. Thus, both the OSHA Salt Lake City Technical Center (OSLTC) method (OSHA, no date) and the Jaffe method (Du Pont, no date) for the determination of CRTU are specified under this protocol (i.e., either of these 2 methods may be used). Note that although detection limits are not reported for either of these CRTU methods, the range of measurements expected for CRTU (0.9-1.7 µg/l) are well above the likely limit of detection for either of these methods (Harrison, 1987).

Laboratories using alternate methods should submit sufficient data to the responsible physicians demonstrating that the alternate method is capable of satisfying the defined data quality objectives of the program. Such laboratories also should submit a QA/QC plan that documents the performance of the alternate method in a manner entirely equivalent to the QA/QC plans proposed in Section 3.3.1.

3.2 Duties of the Responsible Physician

The responsible physician will evaluate biological monitoring results provided by participating laboratories to determine whether such laboratories are proficient and have satisfied the QA/QC recommendations. In determining which laboratories to employ for this purpose, these physicians should review proficiency and QA/QC data submitted to them by the participating laboratories.

Participating laboratories should demonstrate proficiency for each analyte (CDU, CDB and B2MU) sampled under the biological monitoring program. Participating laboratories involved in analyzing CDU and B2MU also should demonstrate proficiency for CRTU analysis, or provide evidence of a contract with a laboratory proficient in CRTU analysis.

3.2.1 Recommendations for Selecting Among Existing Laboratories

OSHA recommends that existing laboratories providing commercial analyses for CDB, CDU and/or B2MU for the medical monitoring program satisfy the following criteria:

1. Should have performed commercial analyses for the appropriate analyte (CDB, CDU and/or B2MU) on a regular basis over the last 2 years;

2. Should provide the responsible physician with an internal QA/QC plan;

3. If performing CDU or B2MU analyses, the participating laboratory should be accredited by the CAP for CRTU analysis, and should be enrolled in the corresponding CAP survey (note that alternate credentials may be acceptable, but acceptability is to be determined by the responsible physician); and,

4. Should have enrolled in the CTQ interlaboratory comparison program for the appropriate analyte (CDB, CDU and/or B2MU).

Participating laboratories should submit appropriate documentation demonstrating compliance with the above criteria to the responsible physician. To demonstrate compliance with the first of the above criteria, participating laboratories should submit the following documentation for each analyte they plan to analyze (note that each document should cover a period of at least 8 consecutive quarters, and that the period designated by the term "regular analyses" is at least once a quarter):

1. Copies of laboratory reports providing results from regular analyses of the appropriate analyte (CDB, CDU and/or B2MU);

2. Copies of 1 or more signed and executed contracts for the provision of regular analyses of the appropriate analyte (CDB, CDU and/or B2MU); or,

3. Copies of invoices sent to 1 or more clients requesting payment for the provision of regular analyses of the appropriate analyte (CDB, CDU and/or B2MU). Whatever the form of documentation submitted, the specific analytic procedures conducted should be identified directly. The forms that are copied for submission to the responsible physician also should identify the laboratory which provided these analyses.

To demonstrate compliance with the second of the above criteria, a laboratory should submit to the responsible physician an internal QA/QC plan detailing the standard operating procedures to be adopted for satisfying the recommended QA/QC procedures for the analysis of each specific analyte (CDB, CDU and/or B2MU). Procedures for internal QA/QC programs are detailed in Section 3.3.1 below.

To satisfy the third of the above criteria, laboratories analyzing for CDU or B2MU also should submit a QA/QC plan for creatinine analysis (CRTU); the QA/QC plan and characterization analyses for CRTU must come from the laboratory performing the CRTU analysis, even if the CRTU analysis is being performed by a contract laboratory.

Laboratories enrolling in the CTQ program (to satisfy the last of the above criteria) must remit, with the enrollment application, an initial fee of approximately $100 per analyte. (Note that this fee is only an estimate, and is subject to revision without notice.) Laboratories should indicate on the application that they agree to have proficiency test results sent by the CTQ directly to the physicians designated by participating laboratories.

Once a laboratory's application is processed by the CTQ, the laboratory will be assigned a code number which will be provided to the laboratory on the initial confirmation form, along with identification of the specific analytes for which the laboratory is participating. Confirmation of participation will be sent by the CTQ to physicians designated by the applicant laboratory.

3.2.2 Recommended Review of Laboratories Selected to Perform Analyses

Six months after being selected initially to perform analyte determinations, the status of participating laboratories should be reviewed by the responsible physicians. Such reviews should then be repeated every 6 months or whenever additional proficiency or QA/QC documentation is received (whichever occurs first).

As soon as the responsible physician has received the CTQ results from the first 3 rounds of proficiency testing (i.e., 3 sets of 3 samples each for CDB, CDU and/or B2MU) for a participating laboratory, the status of the laboratory's continued participation should be reviewed. Over the same initial 6-month period, participating laboratories also should provide responsible physicians the results of their internal QA/QC monitoring program used to assess performance for each analyte (CDB, CDU and/or B2MU) for which the laboratory performs determinations. This information should be submitted using appropriate forms and documentation.

The status of each participating laboratory should be determined for each analyte (i.e., whether the laboratory satisfies minimum proficiency guidelines based on the proficiency samples sent by the CTQ and the results of the laboratory's internal QA/QC program). To maintain competency for analysis of CDB, CDU and/or B2MU during the first review, the laboratory should satisfy performance requirements for at least 2 of the 3 proficiency samples provided in each of the 3 rounds completed over the 6-month period. Proficiency should be maintained for the analyte(s) for which the laboratory conducts determinations.

To continue participation for CDU and/or B2MU analyse, laboratories also should either maintain accreditation for CRTU analysis in the CAP program and participate in the CAP surveys, or they should contract the CDU and B2MU analyses to a laboratory which satisfies these requirements (or which can provide documentation of accreditation/participation in an equivalent program).

The performance requirement for CDB analysis is defined as an analytical result within ±1 µg/l blood or 15% of the consensus mean (whichever is greater). For samples

exhibiting a consensus mean less than 1 μg/l, the performance requirement is defined as a concentration between the detection limit of the analysis and a maximum of 2 μg/l. The purpose for redefining the acceptable interval for low CDB values is to encourage proper reporting of the actual values obtained during measurement; laboratories, therefore, will not be penalized (in terms of a narrow range of acceptability) for reporting measured concentrations smaller than 1 μg/l.

The performance requirement for CDU analysis is defined as an analytical result within ±1 μg/l urine or 15% of the consensus mean (whichever is greater). For samples exhibiting a consensus mean less than 1 μg/l urine, the performance requirement is defined as a concentration between the detection limit of the analysis and a maximum of 2 μg/l urine. Laboratories also should demonstrate proficiency in creatinine analysis as defined by the CAP Note that reporting CDU results, other than for the CTQ proficiency samples (i.e., compliance samples), should be accompanied with results of analyses for CRTU, and these 2 sets of results should be combined to provide a measure of CDU in units of μg/g CRTU

The performance requirement for B2MU is defined as analytical results within ± 15% of the consensus mean. Note that reporting B2MU results, other than for CTQ proficiency samples (i.e., compliance samples), should be accompanied with results of analyses for CRTU, and these 2 sets of results should be combined to provide a measure of B2MU in units of μg/g CRTU

There are no recommended performance checks for CRTU analyses. As stated previously, laboratories performing CRTU analysis in support of CDU or B2MU analyses should be accredited by the CAP, and participating in the CAP's survey for CRTU

Following the first review, the status of each participating laboratory should be reevaluated at regular intervals (i.e., corresponding to receipt of results from each succeeding round of proficiency testing and submission of reports from a participating laboratory's internal QA/QC program).

After a year of collecting proficiency test results, the following proficiency criterion should be added to the set of criteria used to determine the participating laboratory's status (for analyzing CDB, CDU and/or B2MU): A participating laboratory should not fail performance requirements for more than 4 samples from the 6 most recent consecutive rounds used to assess proficiency for CDB, CDU and/or B2MU separately (i.e., a total of 18 discrete proficiency samples for each analyte). Note that this requirement does not replace, but supplements, the recommendation that a laboratory should satisfy the performance criteria for at least 2 of the 3 samples tested for each round of the program.

3.2.3 Recommendations for Selecting Among Newly-Formed Laboratories (or Laboratories that Previously Failed to Meet the Protocol Guidelines)

OSHA recommends that laboratories that have not previously provided commercial analyses of CDB, CDU and/or B2MU (or have done so for a period less than 2 years), or which have provided these analyses for 2 or more years but have not conformed previously with these protocol guidelines, should satisfy the following provisions for each analyte for which determinations are to be made prior to being selected to analyze biological samples under the medical monitoring program:

1. Submit to the responsible physician an internal QA/QC plan detailing the standard operating procedures to be adopted for satisfying the QA/QC guidelines (guidelines for internal QA/QC programs are detailed in Section 3.3.1);

2. Submit to the responsible physician the results of the initial characterization analyses for each analyte for which determinations are to be made;n

3. Submit to the responsible physician the results, for the initial 6-month period, of the internal QA/QC program for each analyte for which determinations are to be made (if no commercial analyses have been conducted previously, a minimum of 2 mock standardization trials for each analyte should be completed per month for a 6-month period);

4. Enroll in the CTQ program for the appropriate analyte for which determinations are to be made, and arrange to have the CTQ program submit the initial confirmation of participation and proficiency test results directly to the designated physicians. Note that the designated physician should receive results from 3 completed rounds from the CTQ program before approving a laboratory for participation in the biological monitoring program,

5. Laboratories seeking participation for CDU and/or B2MU analyses should submit to the responsible physician documentation of accreditation by the CAP for CRTU analyses performed in conjunction with CDU and/or B2MU determinations (if CRTU analyses are conducted by a contract laboratory, this laboratory should submit proof of CAP accreditation to the responsible physician); and,

6. Documentation should be submitted on an appropriate form.

To participate in CDB, CDU and/or B2MU analyses, the laboratory should satisfy the above criteria for a minimum of 2 of the 3 proficiency samples provided in each of the 3 rounds of the CTQ program over a 6-month period; this procedure should be completed for each appropriate analyte. Proficiency should be maintained for each analyte to continue participation. Note that laboratories seeking participation for CDU or B2MU also should address the performance requirements for CRTU, which involves providing evidence of accreditation by the CAP and participation in the CAP surveys (or an equivalent program).

The performance requirement for CDB analysis is defined as an analytical result within ±1 μg/l or 15% of the consensus mean (whichever is greater). For samples exhibiting a consensus mean less than 1 μg/l, the performance requirement is defined as a concentration between the detection limit of the analysis and a maximum of 2 μg/l. The purpose of redefining the acceptable interval for low CDB values is to encourage proper reporting of the actual values obtained during measurement; laboratories, therefore, will not be penalized (in terms of a narrow range of acceptability) for reporting measured concentrations less than 1 μg/l.

The performance requirement for CDU analysis is defined as an analytical result within ±1 μg/l urine or 15% of the consensus mean (whichever is greater). For samples exhibiting a consensus mean less than 1 μg/l urine, the performance requirement is defined as a concentration that falls between the detection limit of the analysis and a maximum of 2 μg/l urine. Performance requirements for the companion CRTU analysis (defined by the CAP) also should be met. Note that reporting CDU results, other than for CTQ proficiency testing should be accompanied with results of CRTU analyses, and these 2 sets of results should be combined to provide a measure of CDU in units of μg/g CRTU.

The performance requirement for B2MU is defined as an analytical result within ±15% of the consensus mean. Note that reporting B2MU results, other than for CTQ proficiency testing should be accompanied with results of CRTU analysis, these 2 sets of results should be combined to provide a measure of B2MU in units of μg/g CRTU.

Once a new laboratory has been approved by the responsible physician for conducting analyte determinations, the status of this approval should be reviewed periodically by the responsible physician as per the criteria presented under Section 3.2.2.

Laboratories which have failed previously to gain approval of the responsible physician for conducting determinations of 1 or more analytes due to lack of compliance with the criteria defined above for existing laboratories (Section 3.2.1), may obtain approval by satisfying the criteria for newly-formed laboratories defined under this section; for these laboratories, the second of the above criteria may be satisfied by submitting a new set of characterization analyses for each analyte for which determinations are to be made.

Reevaluation of these laboratories is discretionary on the part of the responsible physician. Reevaluation, which normally takes about 6 months, may be expedited if the laboratory can achieve 100% compliance with the proficiency test criteria using the 6 samples of each analyte submitted to the CTQ program during the first 2 rounds of proficiency testing.

For laboratories seeking reevaluation for CDU or B2MU analysis, the guidelines for CRTU analyses also should be satisfied, including accreditation for CRTU analysis by the CAP, and participation in the CAP survey program (or accreditation/participation in an equivalent program).

3.2.4 Future Modifications to the Protocol Guidelines

As participating laboratories gain experience with analyses for CDB, CDU and B2MU, it is anticipated that the performance achievable by the majority of laboratories should improve until it approaches that reported by the research groups which developed each method. OSHA, therefore, may choose to recommend stricter performance guidelines in the future as the overall performance of participating laboratories improves.

3.3 Guidelines for Record Keeping and Reporting

To comply with these guidelines, participating laboratories should satisfy the above-stated performance and proficiency recommendations, as well as the following internal QA/QC, record keeping, and reporting provisions.

If a participating laboratory fails to meet the provisions of these guidelines, it is recommended that the responsible physician disapprove further analyses of biological samples by that laboratory until it demonstrates compliance with these guidelines. On disapproval, biological samples should be sent to a laboratory that can demonstrate compliance with these guidelines, at least until the former laboratory is reevaluated by the responsible physician and found to be in compliance.

The following record keeping and reporting procedures should be practiced by participating laboratories.

3.3.1 Internal Quality Assurance/Quality Control Procedures

Laboratories participating in the cadmium monitoring program should develop and maintain an internal quality assurance/quality control (QA/QC) program that incorporates procedures for establishing and maintaining control for each of the analytic procedures (determinations of CDB, CDU and/or B2MU) for which the laboratory is seeking participation. For laboratories analyzing CDU and/or B2MU, a QA/QC program for CRTU also should be established.

Written documentation of QA/QC procedures should be described in a formal QA/QC plan; this plan should contain the following information: Sample acceptance and handling procedures (i.e., chain-of-custody); sample preparation procedures; instrument parameters; calibration procedures; and, calculations. Documentation of QA/QC procedures should be sufficient to identify analytical problems, define criteria under which analysis of compliance samples will be suspended, and describe procedures for corrective actions.

3.3.1.1 *QA/QC procedures for establishing control of CDB and CDU analyses*

The QA/QC program for CDB and CDU should address, at a minimum, procedures involved in calibration, establishment of control limits, internal QC analyses and maintaining control, and corrective-action protocols. Participating laboratory should develop and maintain procedures to assure that analyses of compliance samples are within control limits, and that these procedures are documented thoroughly in a QA/QC plan.

A nonmandatory QA/QC protocol is presented in Attachment 1. This attachment is illustrative of the procedures that should be addressed in a proper QA/QC program.

Calibration. Before any analytic runs are conducted, the analytic instrument should be calibrated. Calibration should be performed at the beginning of each day on which QC and/or compliance samples are run. Once calibration is established, QC or compliance samples may be run. Regardless of the type of samples run, about every fifth sample should serve as a standard to assure that calibration is being maintained.

Calibration is being maintained if the standard is within ±15% of its theoretical value. If a standard is more than ±15% of its theoretical value, the run has exceeded control limits due to calibration error; the entire set of samples then should be reanalyzed after recalibrating or the results should be recalculated based on a statistical curve derived from that set of standards.

It is essential that the value of the highest standard analyzed be higher than the highest sample analyzed; it may be necessary, therefore, to run a high standard at the end of the run, which has been selected based on results obtained over the course of the run (i.e., higher than any standard analyzed to that point).

Standards should be kept fresh; as samples age, they should be compared with new standards and replaced if necessary.

Internal Quality Control Analyses. Internal QC samples should be determined interspersed with analyses of compliance samples. At a minimum, these samples should be run at a rate of 5% of the compliance samples or at least one set of QC samples per analysis of compliance samples, whichever is greater. If only 2 samples are run, they should contain different levels of cadmium.

Internal QC samples may be obtained as commercially-available reference materials and/or they may be internally prepared. Internally-prepared samples should be well characterized and traced, or compared to a reference material for which a consensus value is available.

Levels of cadmium contained in QC samples should not be known to the analyst prior to reporting the results of the analysis.

Internal QC results should be plotted or charted in a manner which describes sample recovery and laboratory control limits.

Internal Control Limits. The laboratory protocol for evaluating internal QC analyses per control limits should be clearly defined. Limits may be based on statistical methods (e.g., as 2σ from the laboratory mean recovery), or on proficiency testing limits (e.g., ±1 µg or 15% of the mean, whichever is greater). Statistical limits that exceed ±40% should be reevaluated to determine the source error in the analysis.

When laboratory limits are exceeded, analytic work should terminate until the source of error is determined and corrected; compliance samples affected by the error should be reanalyzed. In addition, the laboratory protocol should address any unusual trends that develop which may be biasing the results. Numerous, consecutive results above or below laboratory mean recoveries, or outside laboratory statistical limits, indicate that problems may have developed.

Corrective Actions. The QA/QC plan should document in detail specific actions taken if control limits are exceeded or unusual trends develop. Corrective actions should be noted on an appropriate form, accompanied by supporting documentation.

In addition to these actions, laboratories should include whatever additional actions are necessary to assure that accurate data are reported to the responsible physicians.

Reference Materials. The following reference materials may be available:

Cadmium in Blood (CDB)

1. Centre de Toxicologie du Quebec, Le Centre Hospitalier de l'Universite Laval, 2705 boul. Laurier, Quebec, Que., Canada G1V 4G2. (Prepared 6 times per year at 1–15 µg Cd/l.)

2. H. Marchandise, Community Bureau of Reference-BCR, Directorate General XII, Commission of the European Communities, 200, rue de la Loi, B–1049, Brussels, Belgium. (Prepared as Bl CBM–1 at 5.37 µg Cd/l, and Bl CBM–2 at 12.38 µg Cd/l.)

3. Kaulson Laboratories Inc., 691 Bloomfield Ave., Caldwell, NJ 07006; tel. (201) 226–9494, FAX (201) 226–3244. (Prepared as #0141 [As, Cd, Hg, Pb] at 2 levels.)

Cadmium in Urine (CDU)

1. Centre de Toxicologie du Quebec, Le Centre Hospitalier de l'Universite Laval, 2705 boul. Laurier, Quebec, Que., Canada G1V 4G2. (Prepared 6 times per year.)

2. National Institute of Standards and Technology (NIST), Dept. of Commerce, Gaithersburg, MD; tel: (301) 975–6776. (Prepared as SRM 2670 freeze-dried urine [metals]; set includes normal and elevated levels of metals; cadmium is certified for elevated level of 88.0 µg/l in reconstituted urine.)

3. Kaulson Laboratories Inc., 691 Bloomfield Ave., Caldwell, NJ 07006, tel (201) 226–9494, FAX (201) 226–3244. (Prepared as #0140 [As, Cd, Hg, Pb] at 2 levels.)

3.3.1.2 *QA/QC procedures for establishing control of B2MU*

A written, detailed QA/QC plan for B2MU analysis should be developed. The QA/QC plan should contain a protocol similar to those protocols developed for the CDB/CDU analyses. Differences in analyses may warrant some differences in the QA/QC protocol, but procedures to ensure analytical integrity should be developed and followed.

Examples of performance summaries that can be provided include measurements of accuracy (i.e., the means of measured values versus target values for the control samples) and precision (i.e., based on duplicate analyses). It is recommended that the accuracy and precision measurements be compared to those reported as achievable by the Pharmacia Delphia kit (Pharmacia 1990) to determine if and when unsatisfactory analyses have arisen. If the measurement error of 1 or more of the control samples is more than 15%, the run exceeds control limits. Similarly, this decision is warranted when the average CV for duplicate samples is greater than 5%.

3.3.2 Procedures for Record Keeping

To satisfy reporting requirements for commercial analyses of CDB, CDU and/or B2MU performed for the medical monitoring program mandated under the cadmium rule participating laboratories should maintain the following documentation for each analyte:

1. For each analytic instrument on which analyte determinations are made, records

relating to the most recent calibration and QC sample analyses;

2. For these instruments, a tabulated record for each analyte of those determinations found to be within and outside of control limits over the past 2 years;

3. Results for the previous 2 years of the QC sample analyses conducted under the internal QA/QC program (this information should be: Provided for each analyte for which determinations are made and for each analytic instrument used for this purpose, sufficient to demonstrate that internal QA/QC programs are being executed properly, and consistent with data sent to responsible physicians.

4. Duplicate copies of monitoring results for each analyte sent to clients during the previous 5 years, as well as associated information; supporting material such as chain-of-custody forms also should be retained; and,

5. Proficiency test results and related materials received while participating in the CTQ interlaboratory program over the past 2 years; results also should be tabulated to provide a serial record of relative error (derived per Section 3.3.3 below).

3.3.3 Reporting Procedures

Participating laboratories should maintain these documents: QA/QC program plans; QA/QC status reports; CTQ proficiency program reports; and, analytical data reports. The information that should be included in these reports is summarized in Table 2; a copy of each report should be sent to the responsible physician.

TABLE 2.—REPORTING PROCEDURES FOR LABORATORIES PARTICIPATING IN THE CADMIUM MEDICAL MONITORING PROGRAM

Report	Frequency (time frame)	Contents
1 QA/QC Program Plan	Once (initially)	A detailed description of the QA/QC protocol to be established by the laboratory to maintain control of analyte determinations.
2 QA/QC Status Report	Every 2 months	Results of the QC samples incorporated into regular runs for each instrument (over the period since the last report).
3 Proficiency Report	Attached to every data report	Results from the last full year of proficiency samples submitted to the CTQ program and Results of the 100 most recent QC samples incorporated into regular runs for each instrument.
4 Analytical Data Report	For all reports of data results	Date the sample was received; Date the sample was analyzed; Appropriate chain-of-custody information; Types of analyses performed; Results of the requested analyses and Copy of the most current proficiency report.

As noted in Section 3.3.1, a QA/QC program plan should be developed that documents internal QA/QC procedures (defined under Section 3.3.1) to be implemented by the participating laboratory for each analyte; this plan should provide a list identifying each instrument used in making analyte determinations.

A QA/QC status report should be written bimonthly for each analyte. In this report, the results of the QC program during the reporting period should be reported for each analyte in the following manner: The number (N) of QC samples analyzed during the period; a table of the target levels defined for each sample and the corresponding measured values; the mean of F/T value (as defined below) for the set of QC samples run during the period; and, use of $\bar{X}\pm2\hat{\sigma}$ (as defined below) for the set of QC samples run during the period as a measure of precision.

As noted in Section 2, an F/T value for a QC sample is the ratio of the measured concentration of analyte to the established (i.e., reference) concentration of analyte for that QC sample. The equation below describes the derivation of the mean for F/T values, X (with N being analyzed the total number of samples analyzed):

$$\bar{X} = \frac{\Sigma(F/T)}{N}$$

The standard deviation, $\hat{\sigma}$, for these measurements is derived using the following equation (note that $2\hat{\sigma}$ is twice this value):

$$\hat{\sigma} = \left[\frac{\Sigma(F/T-\bar{X})^2}{N-1}\right]^{\frac{1}{2}}$$

The nonmandatory QA/QC protocol (see Attachment 1) indicates that QC samples should be divided into several discrete pools, and a separate estimate of precision for each pools then should be derived. Several precision estimates should be provided for concentrations which differ in average value. These precision measures may be used to document improvements in performance with regard to the combined pool.

Participating laboratories should use the CTQ proficiency program for each analyte. Results of the this program will be sent by CTQ directly to physicians designated by the participating laboratories. Proficiency results from the CTQ program are used to establish the accuracy of results from each participating laboratory, and should be provided to responsible physicians for use in trend analysis. A proficiency report consisting of these proficiency results should accompany data reports as an attachment.

For each analyte, the proficiency report should include the results from the 6 previous proficiency rounds in the following format:

1. Number (N) of samples analyzed;
2. Mean of the target levels, $(1/N)\Sigma T_i$, with T_i being a consensus mean for the sample;
3. Mean of the measurements, $(1/N)\Sigma M_i$, with M_i being a sample measurement;
4. A measure of error defined by:

$(1/N)\Sigma(T_i - M_i)^2$

Analytical data reports should be submitted to responsible physicians directly. For each sample, report the following information: The date the sample was received; the date the sample was analyzed; appropriate chain-of-custody information; the type(s) of analyses performed; and, the results of the analyses. This information should be reported on a form similar to the form provided an appropriate form. The most recent proficiency program report should accompany the analytical data reports (as an attachment).

Confidence intervals for the analytical results should be reported as $X\pm2\hat{\sigma}$, with X being the measured value and $2\hat{\sigma}$ the standard deviation calculated as described above.

For CDU or B2MU results, which are combined with CRTU measurements for proper reporting, the 95% confidence limits are derived from the limits for CDU or B2MU, (p), and the limits for CRTU, (q), as follows:

$$\frac{X}{Y} \pm \left(\frac{1}{Y^2}\right)(Y^2 \times p^2 + X^2 \times q^2)^{\frac{1}{2}}$$

For these calculations, X±p is the measurement and confidence limits for CDU or B2MU, and Y±q is the measurement and confidence limit for CRTU.

Participating laboratories should notify responsible physicians as soon as they receive information indicating a change in their accreditation status with the CTQ or the CAP. These physicians should not be expected to wait until formal notice of a status change has been received from the CTQ or the CAP.

3.4 Instructions to Physicians

Physicians responsible for the medical monitoring of cadmium-exposed workers must collect the biological samples from workers; they then should select laboratories

to perform the required analyses, and should interpret the analytic results.

3.4.1 Sample Collection and Holding Procedures

Blood Samples. The following procedures are recommended for the collection, shipment and storage of blood samples for CDB analysis to reduce analytical variablility; these recommendations were obtained primarily through personal communications with J.P. Weber of the CTQ (1991), and from reports by the Centers for Disease Control (CDC, 1986) and Stoeppler and Brandt (1980).

To the extent possible, blood samples should be collected from workers at the same time of day. Workers should shower or thoroughly wash their hands and arms before blood samples are drawn. The following materials are needed for blood sample collection: Alcohol wipes; sterile gauze sponges; band-aids; 20-gauge, 1.5-in. stainless steel needles (sterile); preprinted labels; tourniquets; vacutainer holders; 3-ml "metal free" vacutainer tubes (i.e., dark-blue caps), with EDTA as an anti-coagulant; and, styrofoam vacutainer shipping containers.

Whole blood samples are taken by venipuncture. Each blue-capped tube should be labeled or coded for the worker and company before the sample is drawn. (Blue-capped tubes are recommended instead of red-capped tubes because the latter may consist of red coloring pigment containing cadmium, which could contaminate the samples.) Immediately after sampling, the vacutainer tubes must be thoroughly mixed by inverting the tubes at least 10 times manually or mechanically using a Vortex device (for 15 sec). Samples should be refrigerated immediately or stored on ice until they can be packed for shipment to the participating laboratory for analysis.

The CDC recommends that blood samples be shipped with a "cool pak" to keep the samples cold during shipment. However, the CTQ routinely ships and receives blood samples for cadmium analysis that have not been kept cool during shipment. The CTQ has found no deterioration of cadmium in biological fluids that were shipped via parcel post without a cooling agent, even though these deliveries often take 2 weeks to reach their destination.

Urine Samples. The following are recommended procedures for the collection, shipment and storage of urine for CDU and B2MU analyses, and were obtained primarily through personal communications with J.P. Weber of the CTQ (1991), and from reports by the CDC (1986) and Stoeppler and Brandt (1980).

Single "spot" samples are recommended. As B2M can degrade in the bladder, workers should first empty their bladder and then drink a large glass of water at the start of the visit. Urine samples then should be collected within 1 hour. Separate samples should be collected for CDU and B2MU using the following materials: Sterile urine collection cups (250 ml); small sealable plastic bags; preprinted labels; 15-ml polypropylene or polyethylene screw-cap tubes; lab gloves ("metal free"); and, preservatives (as indicated).

The sealed collection cup should be kept in the plastic bag until collection time. The workers should wash their hands with soap and water before receiving the collection cup. The collection cup should not be opened until just before voiding and the cup should be sealed immediately after filling. It is important that the inside of the container and cap are not touched by, or come into contact with, the body, clothing or other surfaces.

For CDU analyzes, the cup is swirled gently to resuspend any solids, and the 15-ml tube is filled with 10-12 ml urine. The CDC recommends the addition of 100 µl concentrated HNO_3 as a preservative before sealing the tube and then freezing the sample. The CTQ recommends minimal handling and does not acidify their interlaboratory urine reference materials prior to shipment, nor do they freeze the sample for shipment. At the CTQ, if the urine sample has much sediment, the sample is acidified in the lab to free any cadmium in the precipitate.

For B2M, the urine sample should be collected directly into a polyethylene bottle previously washed with dilute nitric acid. The pH of the urine should be measured and adjusted to 8.0 with 0.1 N NaOH immediately following collection. Samples should be frozen and stored at –20°C until testing is performed. The B2M in the samples should be stable for 2 days when stored at 2–8°C, and for at least 2 months at –20°C. Repeated freezing and thawing should be avoided to prevent denaturing the B2M (Pharmacia 1990).

3.4.2 Recommendations for Evaluating Laboratories

Using standard error data and the results of proficiency testing obtained from CTQ, responsible physicians can make an informed choice of which laboratory to select to analyze biological samples. In general, laboratories with small standard errors and little disparity between target and measured values tend to make precise and accurate sample determinations. Estimates of precision provided to the physicians with each set of monitoring results can be compared to previously-reported proficiency and precision estimates. The latest precision estimates should be at least as small as the standard error reported previously by the laboratory. Moreover, there should be no indication that precision is deteriorating (i.e., increasing values for the precision estimates). If precision is deteriorating, physicians may decide to use another laboratory for these analyses. QA/QC information provided by the participating laboratories to physicians can, therefore, assist physicians in evaluating laboratory performance.

3.4.3 Use and Interpretation of Results

When the responsible physician has received the CDB, CDU and/or B2MU results, these results must be compared to the action levels discussed in the final rule for cadmium. The comparison of the sample results to action levels is straightforward. The measured value reported from the laboratory can be compared directly to the action levels; if the reported value exceeds an action level, the required actions must be initiated.

4.0 Background

Cadmium is a naturally-occurring environmental contaminant to which humans are continually exposed in food, water, and air. The average daily intake of cadmium by the U.S. population is estimated to be 10–20 µg/day. Most of this intake is via ingestion, for which absorption is estimated at 4–7% (Kowal et al. 1979). An additional nonoccupational source of cadmium is smoking tobacco; smoking a pack of cigarettes a day adds an additional 2–4 µg cadmium to the daily intake, assuming absorption via inhalation of 25–35% (Nordberg and Nordberg 1988; Friberg and Elinder 1988; Travis and Haddock 1980).

Exposure to cadmium fumes and dusts in an occupational setting where air concentrations are 20–50 µg/m³ results in an additional daily intake of several hundred micrograms (Friberg and Elinder 1988, p. 563). In such a setting, occupational exposure to cadmium occurs primarily via inhalation, although additional exposure may occur through the ingestion of material via contaminated hands if workers eat or smoke without first washing. Some of the particles that are inhaled initially may be ingested when the material is deposited in the upper respiratory tract, where it may be cleared by mucociliary transport and subsequently swallowed.

Cadmium introduced into the body through inhalation or ingestion is transported by the albumin fraction of the blood plasma to the liver, where it accumulates and is stored principally as a bound form complexed with the protein metallothionein. Metallothionein-bound cadmium is the main form of cadmium subsequently transported to the kidney; it is these 2 organs, the liver and kidney, in which the majority of the cadmium body burden accumulates. As much as one half of the total body burden of cadmium may be found in the kidneys (Nordberg and Nordberg 1988).

Once cadmium has entered the body, elimination is slow; about 0.02% of the body burden is excreted per day via urinary/fecal elimination. The whole-body half-life of cadmium is 10–35 years, decreasing slightly with increasing age (Travis and Haddock 1980).

The continual accumulation of cadmium is the basis for its chronic noncarcinogenic toxicity. This accumulation makes the kidney the target organ in which cadmium toxicity usually is first observed (Piscator 1964). Renal damage may occur when cadmium levels in the kidney cortex approach 200 µg/g wet tissue-weight (Travis and Haddock 1980).

The kinetics and internal distribution of cadmium in the body are complex, and depend on whether occupational exposure to cadmium is ongoing or has terminated. In general, cadmium in blood is related principally to recent cadmium exposure, while cadmium in urine reflects cumulative exposure (i.e., total body burden) (Lauwerys et al. 1976; Friberg and Elinder 1988).

4.1 Health Effects

Studies of workers in a variety of industries indicate that chronic exposure to cadmium may be linked to several adverse

health effects including kidney dysfunction, reduced pulmonary function, chronic lung disease and cancer (Federal Register 1990). The primary sites for cadmium-associated cancer appear to be the lung and the prostate.

Cancer. Evidence for an association between cancer and cadmium exposure comes from both epidemiological studies and animal experiments. Pott (1965) found a statistically significant elevation in the incidence of prostate cancer among a cohort of cadmium workers. Other epidemiology studies also report an elevated incidence of prostate cancer; however, the increases observed in these other studies were not statistically significant (Meridian Research, Inc. 1989).

One study (Thun et al. 1985) contains sufficiently quantitative estimates of cadmium exposure to allow evaluation of dose-response relationships between cadmium exposure and lung cancer. A statistically significant excess of lung cancer attributed to cadmium exposure was found in this study, even after accounting for confounding variables such as coexposure to arsenic and smoking habits (Meridian Research, Inc. 1989).

Evidence for quantifying a link between lung cancer and cadmium exposure comes from a single study (Takenaka et al. 1983). In this study, dose-response relationships developed from animal data were extrapolated to humans using a variety of models. OSHA chose the multistage risk model for estimating the risk of cancer for humans using these animal data. Animal injection studies also suggest an association between cadmium exposure and cancer, particularly observations of an increased incidence of tumors at sites remote from the point of injection. The International Agency for Research on Cancer (IARC) (Supplement 7, 1987) indicates that this, and related, evidence is sufficient to classify cadmium as an animal carcinogen. However, the results of these injection studies cannot be used to quantify risks attendant to human occupational exposures due to differences in routes of exposure (Meridian Research, Inc. 1989).

Based on the above-cited studies, the U.S. Environmental Protection Agency (EPA) classifies cadmium as "B1," a probable human carcinogen (USEPA 1985). IARC in 1987 recommended that cadmium be listed as a probable human carcinogen.

Kidney Dysfunction. The most prevalent nonmalignant effect observed among workers chronically exposed to cadmium is kidney dysfunction. Initially, such dysfunction is manifested by proteinuria (Meridian Research, Inc. 1989; Roth Associates, Inc. 1989). Proteinuria associated with cadmium exposure is most commonly characterized by excretion of low-molecular weight proteins (15,000–40,000 MW), accompanied by loss of electrolytes, uric acid, calcium, amino acids, and phosphate. Proteins commonly excreted include β-2-microglobulin (B2M), retinol-binding protein (RBP), immunoglobulin light chains, and lysozyme. Excretion of low molecular weight proteins is characteristic of damage to the proximal tubules of the kidney (Iwao et al. 1980).

Exposure to cadmium also may lead to urinary excretion of high-molecular weight proteins such as albumin, immunoglobulin G, and glycoproteins (Meridian Research, Inc. 1989; Roth Associates, Inc. 1989). Excretion of high-molecular weight proteins is indicative of damage to the glomeruli of the kidney. Bernard et al. (1979) suggest that cadmium-associated damage to the glomeruli and damage to the proximal tubules of the kidney develop independently of each other, but may occur in the same individual.

Several studies indicate that the onset of low-molecular weight proteinuria is a sign of irreversible kidney damage (Friberg et al. 1974; Roels et al. 1982; Piscator 1984; Elinder et al. 1985; Smith et al. 1986). For many workers, once sufficiently elevated levels of B2M are observed in association with cadmium exposure, such levels do not appear to return to normal even when cadmium exposure is eliminated by removal of the worker from the cadmium-contaminated work environment (Friberg, exhibit 29, 1990).

Some studies indicate that cadmium-induced proteinuria may be progressive; levels of B2MU increase even after cadmium exposure has ceased (Elinder et al. 1985). Other researchers have reached similar conclusions (Frieburg testimony, OSHA docket exhibit 29, Elinder testimony, OSHA docket exhibit 55, and OSHA docket exhibits 8–86B). Such observations are not universal, however (Smith et al. 1986; Tsuchiya 1976). Studies in which proteinuria has not been observed, however, may have initiated the reassessment too early (Meridian Research, Inc.1989; Roth Associates, Inc. 1989; Roels 1989).

A quantitative assessment of the risks of developing kidney dysfunction as a result of cadmium exposure was performed using the data from Ellis et al. (1984) and Falck et al. (1983) Meridian Research, Inc. (1989) and Roth Associates, Inc. (1989) employed several mathematical models to evaluate the data from the 2 studies, and the results indicate that cumulative cadmium exposure levels between 5 and 100 μg-years/m³ correspond with a one-in-a-thousand probability of developing kidney dysfunction.

When cadmium exposure continues past the onset of early kidney damage (manifested as proteinuria), chronic nephrotoxicity may occur (Meridian Research, Inc. 1989; Roth Associates, Inc. 1989). Uremia, which is the loss of the glomerulus' ability to adequately filter blood, may result. This condition leads to severe disturbance of electrolyte concentrations, which may result in various clinical complications including atherosclerosis, hypertension, pericarditis, anemia, hemorrhagic tendencies, deficient cellular immunity, bone changes, and other problems. Progression of the disease may require dialysis or a kidney transplant.

Studies in which animals are chronically exposed to cadmium confirm the renal effects observed in humans (Friberg et al. 1986). Animal studies also confirm cadmium-related problems with calcium metabolism and associated skeletal effects, which also have been observed among humans. Other effects commonly reported in chronic animal studies include anemia, changes in liver morphology, immunosuppression and hypertension. Some of these effects may be associated with cofactors; hypertension, for example, appears to be associated with diet, as well as with cadmium exposure. Animals injected with cadmium also have shown testicular necrosis.

4.2 Objectives for Medical Monitoring

In keeping with the observation that renal disease tends to be the earliest clinical manifestation of cadmium toxicity, the final cadmium standard mandates that eligible workers must be medically monitored to prevent this condition (as well as cadmimum-induced cancer). The objectives of medical-monitoring, therefore, are to: Identify workers at significant risk of adverse health effects from excess, chronic exposure to cadmium; prevent future cases of cadmium-induced disease; detect and minimize existing cadmium-induced disease; and, identify workers most in need of medical intervention.

The overall goal of the medical monitoring program is to protect workers who may be exposed continuously to cadmium over a 45-year occupational lifespan. Consistent with this goal, the medical monitoring program should assure that:

1. Current exposure levels remain sufficiently low to prevent the accumulation of cadmium body burdens sufficient to cause disease in the future by monitoring CDB as an indicator of recent cadmium exposure;

2. Cumulative body burdens, especially among workers with undefined historical exposures, remain below levels potentially capable of leading to damage and disease by assessing CDU as an indicator of cumulative exposure to cadmium; and,

3. Health effects are not occurring among exposed workers by determining B2MU as an early indicator of the onset of cadmium-induced kidney disease.

4.3 Indicators of Cadmium Exposure and Disease

Cadmium is present in whole blood bound to albumin, in erythrocytes, and as a metallothionein-cadmium complex. The metallothionein-cadmium complex that represents the primary transport mechanism for cadmium delivery to the kidney. CDB concentrations in the general, nonexposed population average 1 μg Cd/l whole blood, with smokers exhibiting higher levels (see Section 5.1.6). Data presented in Section 5.1.6 shows that 95% of the general population not occupationally exposed to cadmium have CDB levels less than 5 μg Cd/l.

If total body burdens of cadmium remain low, CDB concentrations indicate recent exposure (i.e., daily intake). This conclusion is based on data showing that cigarette smokers exhibit CDB concentrations of 2–7 μg/l depending on the number of cigarettes smoked per day (Nordberg and Nordberg 1988), while CDB levels for those who quit smoking return to general population values (approximately 1 μg/l) within several weeks (Lauwerys et al. 1976). Based on these observations, Lauwerys et al. (1976) concluded that CDB has a biological half-life of a few weeks to less than 3 months. As indicated in Section 3.1.6, the upper 95th percentile for CDB levels observed among

those who are not occupationally exposed to cadmium is 5 μg/l, which suggests that the absolute upper limit to the range reported for smokers by Nordberg and Nordberg may have been affected by an extreme value (i.e., beyond 2σ above the mean).

Among occupationally-exposed workers, the occupational history of exposure to cadmium must be evaluated to interpret CDB levels. New workers, or workers with low exposures to cadmium, exhibit CDB levels that are representative of recent exposures, similar to the general population. However, for workers with a history of chronic exposure to cadmium, who have accumulated significant stores of cadmium in the kidneys/liver, part of the CDB concentrations appear to indicate body burden. If such workers are removed from cadmium exposure, their CDB levels remain elevated, possibly for years, reflecting prior long-term accumulation of cadmium in body tissues. This condition tends to occur, however, only beyond some threshold exposure value, and possibly indicates the capacity of body tissues to accumulate cadmium which cannot be excreted readily (Friberg and Elinder 1988; Nordberg and Nordberg 1988).

CDU is widely used as an indicator of cadmium body burdens (Nordberg and Nordberg 1988). CDU is the major route of elimination and, when CDU is measured, it is commonly expressed either as μg Cd/l urine (unadjusted), μg Cd/l urine (adjusted for specific gravity), or μg Cd/g CRTU (see Section 5.2 1). The metabolic model for CDU is less complicated than CDB, since CDU is dependentin large part on the body (i.e., kidney) burden of cadmium. However, a small proportion of CDU still be attributed to recent cadmium exposure, particularly if exposure to high airborne concentrations of cadmium occurred. Note that CDU is subject to larger interindividual and day-to-day variations than CDB, so repeated measurements are recommended for CDU evaluations.

CDU is bound principally to metallothionein, regardless of whether the cadmium originates from metallothionein in plasma or from the cadmium pool accumulated in the renal tubules. Therefore, measurement of metallothionein in urine may provide information similar to CDU, while avoiding the contamination problems that may occur during collection and handling urine for cadmium analysis (Nordberg and Nordberg 1988). However, a commercial method for the determination of metallothionein at the sensitivity levels required under the final cadmium rule is not currently available; therefore, analysis of CDU is recommended.

Among the general population not occupationally exposed to cadmium, CDU levels average less than 1 μg/l (see Section 5.2.7). Normalized for creatinine (CRTU), the average CDU concentration of the general population is less than 1 μg/g CRTU. As cadmium accumulates over the lifespan, CDU increases with age. Also, cigarette smokers may eventually accumulate twice the cadmium body burden of nonsmokers, CDU is slightly higher in smokers than in nonsmokers, even several years after smoking cessation (Nordberg and Nordberg 1988). Despite variations due to age and smoking habits, 95% of those not occupationally exposed to cadmium exhibit levels of CDU less than 3 μg/g CRTU (based on the data presented in Section 5.2.7).

About 0.02% of the cadmium body burden is excreted daily in urine. When the critical cadmium concentration (about 200 ppm) in the kidney is reached, or if there is sufficient cadmium-induced kidney dysfunction, dramatic increases in CDU are observed (Nordberg and Nordberg 1988). Above 200 ppm, therefore, CDU concentrations cease to be an indicator of cadmium body burden, and are instead an index of kidney failure.

Proteinuria is an index of kidney dysfunction, and is defined by OSHA to be a material impairment. Several small proteins may be monitored as markers for proteinuria. Below levels indicative of proteinuria, these small proteins may be early indicators of increased risk of cadmium-induced renal tubular disease. Analytes useful for monitoring cadmium-induced renal tubular damage include:

1. β-2-Microglobulin (B2M), currently the most widely used assay for detecting kidney dysfunction, is the best characterized analyte available (Iwao et al. 1980; Chia et al. 1989);

2. Retinol Binding Protein (RBP) is more stable than B2M in acidic urine (i.e., B2M breakdown occurs if urinary pH is less than 5.5; such breakdown may result in false [i.e., low] B2M values [Bernard and Lauwerys, 1990]);

3. N-Acetyl-B-Glucosaminidase (NAG) is the analyte of an assay that is simple, inexpensive, reliable, and correlates with cadmium levels under 10 μg/g CRTU, but the assay is less sensitive than RBP or B2M (Kawada et al. 1989);

4. Metallothionein (MT) correlates with cadmium and B2M levels, and may be a better predictor of cadmium exposure than CDU and B2M (Kawada et al. 1989);

5. Tamm-Horsfall Glycoprotein (THG) increases slightly with elevated cadmium levels, but this elevation is small compared to increases in urinary albumin, RBP, or B2M (Bernard and Lauwerys 1990);

6. Albumin (ALB), determined by the biuret method, is not sufficiently sensitive to serve as an early indicator of the onset of renal disease (Piscator 1962);

7. Albumin (ALB), determined by the Amido Black method, is sensitive and reproducible, but involves a time-consuming procedure (Piscator 1962);

8. Glycosaminoglycan (GAG) increases among cadmium workers, but the significance of this effect is unknown because no relationship has been found between elevated GAG and other indices of tubular damage (Bernard and Lauwerys 1990);

9. Trehalase seems to increase earlier than B2M during cadmium exposure, but the procedure for analysis is complicated and unreliable (Iwata et al. 1988); and,

10. Kallikrein is observed at lower concentrations among cadmium-exposed workers than among normal controls (Roels et al. 1990).

Of the above analytes, B2M appears to be the most widely used and best characterized analyte to evaluate the presence/absence, as well as the extent of, cadmium-induced renal tubular damage (Kawada, Koyama; and Suzuki 1989; Shaikh and Smith 1984; Nogawa 1984). However, it is important that samples be collected and handled so as to minimize B2M degradation under acidic urine conditions.

The threshold value of B2MU commonly used to indicate the presence of kidney damage 300 μg/g CRTU (Kjellstrom et al. 1977a; Buchet et al. 1980; and Kowal and Zirkes 1983). This value represents the upper 95th or 97.5th percentile level of urinary excretion observed among those without tubular dysfunction (Elinder, exbt L–140–45, OSHA docket H057A). In agreement with these conclusions, the data presented in Section 5.3.7 of this protocol generally indicate that the level of 300 μg/g CRTU appears to define the boundary for kidney dysfunction. It is not clear, however, that this level represents the upper 95th percentile of values observed among those who fail to demonstrate proteinuria effects.

Although elevated B2MU levels appear to be a fairly specific indicator of disease associated with cadmium exposure, other conditions that may lead to elevated B2MU levels include high fevers from influenza, extensive physical exercise, renal disease unrelated to cadmium exposure, lymphomas, and AIDS (Iwao et al. 1980; Schardun and van Epps 1987). Elevated B2M levels observed in association with high fevers from influenza or from extensive physical exercise are transient, and will return to normal levels once the fever has abated or metabolic rates return to baseline values following exercise. The other conditions linked to elevated B2M levels can be diagnosed as part of a properly-designed medical examination. Consequently, monitoring B2M, when accompanied by regular medical examinations and CDB and CDU determinations (as indicators of present and past cadmium exposure), may serve as a specific, early indicator of cadmium-induced kidney damage.

4.4 Criteria for Medical Monitoring of Cadmium Workers

Medical monitoring mandated by the final cadmium rule includes a combination of regular medical examinations and periodic monitoring of 3 analytes: CDB, CDU and B2MU. As indicated above, CDB is monitored as an indicator of current cadmium exposure, while CDU serves as an indicator of the cadmium body burden; B2MU is assessed as an early marker of irreversible kidney damage and disease.

The final cadmium rule defines a series of action levels that have been developed for each of the 3 analytes to be monitored. These action levels serve to guide the responsible physician through a decision-making process. For each action level that is exceeded, a specific response is mandated. The sequence of action levels, and the attendant actions, are described in detail in the final cadmium rule.

Other criteria used in the medical decision-making process relate to tests performed during the medical examination (including a determination of the ability of a worker to wear a respirator). These criteria, however,

are not affected by the results of the analyte determinations addressed in the above paragraphs and, consequently, will not be considered further in these guidelines.

4.5 Defining to Quality and Proficiency of the Analyte Determinations

As noted above in Sections 2 and 3, the quality of a measurement should be defined along with its value to properly interpret the results. Generally, it is necessary to know the accuracy and the precision of a measurement before it can be properly evaluated. The precision of the data from a specific laboratory indicates the extent to which the repeated measurements of the same sample vary within that laboratory. The accuracy of the data provides an indication of the extent to which these results deviate from average results determined from many laboratories performing the same measurement (i.e., in the absence of an independent determination of the true value of a measurement). Note that terms are defined operationally relative to the manner in which they will be used in this protocol. Formal definitions for the terms in italics used in this section can be found in the list of definitions (Section 2).

Another data quality criterion required to properly evaluate measurement results is the limit of detection of that measurement. For measurements to be useful, the range of the measurement which is of interest for biological monitoring purposes must lie entirely above the limit of detection defined for that measurement.

The overall quality of a laboratory's results is termed the performance of that laboratory. The degree to which a laboratory satisfies a minimum performance level is referred to as the proficiency of the laboratory. A successful medical monitoring program, therefore, should include procedures developed for monitoring and recording laboratory performance; these procedures can be used to identify the most proficient laboratories.

5.0 Overview of Medical Monitoring Tests for CDB, CDU, B2MU and CRTU

To evaluate whether available methods for assessing CDB, CDU, B2MU and CRTU are adequate for determining the parameters defined by the proposed action levels, it is necessary to review procedures available for sample collection, preparation and analysis. A variety of techniques for these purposes have been used historically for the determination of cadmium in biological matrices (including CDB and CDU), and for the determination of specific proteins in biological matrices (including B2MU). However, only the most recent techniques are capable of satisfying the required accuracy, precision and sensitivity (i.e., limit of detection) for monitoring at the levels mandated in the final cadmium rule, while still facilitating automated analysis and rapid processing.

5.1 Measuring Cadmium in Blood (CDB)

Analysis of biological samples for cadmium requires strict analytical discipline regarding collection and handling of samples. In addition to occupational settings, where cadmium contamination would be apparent, cadmium is a ubiquitous environmental contaminant, and much care should be exercised to ensure that samples are not contaminated during collection, preparation or analysis. Many common chemical reagents are contaminated with cadmium at concentrations that will interfere with cadmium analysis; because of the widespread use of cadmium compounds as colored pigments in plastics and coatings, the analyst should continually monitor each manufacturer's chemical reagents and collection containers to prevent contamination of samples.

Guarding against cadmium contamination of biological samples is particularly important when analyzing blood samples because cadmium concentrations in blood samples from nonexposed populations are generally less than 2 µg/l (2 ng/ml), while occupationally-exposed workers can be at medical risk to cadmium toxicity if blood concentrations exceed 5 µg/l (ACGIH 1991 and 1992). This narrow margin between exposed and unexposed samples requires that exceptional care be used in performing analytic determinations for biological monitoring for occupational cadmium exposure.

Methods for quantifying cadmium in blood have improved over the last 40 years primarily because of improvements in analytical instrumentation. Also, due to improvements in analytical techniques, there is less need to perform extensive multi-step sample preparations prior to analysis. Complex sample preparation was previously required to enhance method sensitivity (for cadmium), and to reduce interference by other metals or components of the sample.

5.1.1 Analytical Techniques Used to Monitor Cadmium in Biological Matrices

TABLE 3.—COMPARISON OF ANALYTICAL PROCEDURES/INSTRUMENTATION FOR DETERMINATION OF CADMIUM IN BIOLOGICAL SAMPLES

Analytical procedure	Limit of detection [ng/(g or ml)]	Specified biological matrix	Reference	Comments
Flame Atomic Absorption Spectroscopy (FAAS).	≥1.0	Any matrix	Perkin-Elmer (1982)	Not sensitive enough for biomonitoring without extensive sample digestion, metal chelation and organic solvent extraction.
Graphite Furnace Atomic Absorption Spectroscopy (GFAAS).	0.04	Urine	Pruszkowska et al. (1983).	Methods of choice for routine cadmium analysis.
	≥0.20	Blood	Stoeppler and Brandt (1980).	
Inductively-Coupled Argon-Plasma Atomic Emission Spectroscopy (ICAP AES).	2.0	Any matrix	NIOSH (1984A)	Requires extensive sample preparation and concentration of metal with chelating resin. Advantage is simultaneous analyses for as many as 10 metals from 1 sample.
Neutron Activation Gamma Spectroscopy (NA).	1.5	In vivo (liver)	Ellis et al. (1983)	Only available *in vivo* method for direct determination of cadmium body tissue burdens; expensive; absolute determination of cadmium in reference materials.
Isotope Dilution Mass Spectroscopy (IDMS).	<1.0	Any matrix	Michiels and DeBievre (1986).	Suitable for absolute determination of cadmium in reference materials; expensive.
Differential Pulse Anodic Stripping Voltammetry (DPASV).	<1.0	Any matrix	Stoeppler and Brandt (1980).	Suitable for absolute determination of cadmium in reference materials; efficient method to check accuracy of analytical method.

A number of analytical techniques have been used for determining cadmium concentrations in biological materials. A summary of the characteristics of the most widely employed techniques is presented in Table 3. The technique most suitable for medical monitoring for cadmium is atomic absorption spectroscopy (AAS).

To obtain a measurement using AAS, a light source (i.e., hollow cathode or lectrode-free discharge lamp) containing the element of interest as the cathode, is energized and the lamp emits a spectrum that is unique for that element. This light source is focused through a sample cell, and a selected wavelength is monitored by a monochrometer and photodetector cell. Any ground state atoms in the sample that match those of the lamp element and are in the path of the emitted light may absorb some of the light and decrease the amount of light that reaches the photodetector cell. The amount of light absorbed at each characteristic wavelength is proportional to the number of ground state atoms of the corresponding element that are in the pathway of the light between the source and detector.

To determine the amount of a specific metallic element in a sample using AAS, the sample is dissolved in a solvent and aspirated into a high-temperature flame as an aerosol. At high temperatures, the solvent is rapidly evaporated or decomposed and the solute is initially solidified; the majority of the sample elements then are transformed into an atomic vapor. Next, a light beam is focused above the flame and the amount of metal in the sample can be determined by measuring the degree of absorbance of the atoms of the target element released by the flame at a characteristic wavelength.

A more refined atomic absorption technique, flameless AAS, substitutes an electrothermal, graphite furnace for the flame. An aliquot (10–100 µl) of the sample is pipetted into the cold furnace, which is then heated rapidly to generate an atomic vapor of the element.

AAS is a sensitive and specific method for the elemental analysis of metals; its main drawback is nonspecific background absorbtion and scattering of the light beam by particles of the sample as it decomposes at high temperatures; nonspecific absorbance reduces the sensitivity of the analytical method. The problem of nonspecific absorbance and scattering can be reduced by extensive sample pretreatment, such as ashing and/or acid digestion of the sample to reduce its organic content.

Current AAS instruments employ background correction devices to adjust electronically for background absorbtion and scattering. A common method to correct for background effects is to use a deuterium arc lamp as a second light source. A continuum light source, such as the deuterium lamp, emits a broad spectrum of wavelengths instead of specific wavelengths characteristic of a particular element, as with the hollow cathode tube. With this system, light from the primary source and the continuum source are passed alternately through the sample cell. The target element effectively absorbs light only from the primary source (which is much brighter than the continuum source at the characteristic wavelengths), while the background matrix absorbs and scatters light from both sources equally. Therefore, when the ratio of the two beams is measured electronically, the effect of nonspecific background absorption and scattering is eliminated. A less common, but more sophisticated, backgrond correction system is based on the Zeeman effect, which uses a magnetically-activated light polarizer to compensate electronically for nonspecific absorbtion and scattering.

Atomic emission spectroscopy with inductively-coupled argon plasma (AES–ICAP) is widely used to analyze for metals. With this instrument, the sample is aspirated into an extremely hot argon plasma flame, which excites the metal atoms; emission spectra specific for the sample element then are generated. The quanta of emitted light passing through a monochrometer are amplified by photomultiplier tubes and measured by a photodetector to determine the amount of metal in the sample. An advantage of AES–ICAP over AAS is that multi-elemental analyses of a sample can be performed by simultaneously measuring specific elemental emission energies. However, AES–ICAP lacks the sensitivity of AAS, exhibiting a limit of detection which is higher than the limit of detection for graphite-furnace AAS (Table 3).

Neutron activation (NA) analysis and isotope dilution mass spectrometry (IDMS) are 2 additional, but highly specialized, methods that have been used for cadmium determinations. These methods are expensive because they require elaborate and sophisticated instrumentation.

NA analysis has the distinct advantage over other analytical methods of being able to determine cadmium body burdens in specific organs (e.g., liver, kidney) in vivo (Ellis et al. 1983). Neutron bombardment of the target transforms cadmium-113 to cadmium-114, which promptly decays ($<10^{-14}$ sec) to its ground state, emitting gamma rays that are measured using large gamma detectors; appropriate shielding and instrumentation are required when using this method.

IDMS analysis, a definitive but laborious method, is based on the change in the ratio of 2 isotopes of cadmium (cadmium 111 and 112) that occurs when a known amount of the element (with an artificially altered ratio of the same isotopes [i.e., a cadmium 111 "spike"] is added to a weighed aliquot of the sample (Michiels and De Bievre 1986).

5.1.2 Methods Developed for CDB Determinations

A variety of methods have been used for preparing and analyzing CDB samples; most of these methods rely on one of the analytical techniques described above. Among the earliest reports, Princi (1947) and Smith et al. (1955) employed a colorimetric procedure to analyze for CDB and CDU. Samples were dried and digested through several cycles with concentrated mineral acids (HNO_3 and H_2SO_4) and hydrogen peroxide (H_2O_2). The digest was neutralized, and the cadmium was complexed with diphenylthiocarbazone and extracted with chloroform. The dithizone-cadmium complex then was quantified using a spectrometer.

Colorimetric procedures for cadmium analyses were replaced by methods based on atomic absorption spectroscopy (AAS) in the early 1960s, but many of the complex sample preparation procedures were retained. Kjellstrom (1979) reports that in Japanese, American and Swedish laboratories during the early 1970s, blood samples were wet ashed with mineral acids or ashed at high temperature and wetted with nitric acid. The cadmium in the digest was complexed with metal chelators including diethyl dithiocarbamate (DDTC), ammonium pyrrolidine dithiocarbamate (APDC) or diphenylthiocarbazone (dithizone) in ammonia-citrate buffer and extracted with methyl isobutyl ketone (MIBK). The resulting solution then was analyzed by flame AAS or graphite-furnace AAS forcadmium determinations using deuterium-lamp background correction.

In the late 1970s, researchers began developing simpler preparation procedures. Roels et al. (1978) and Roberts and Clark (1986) developed simplified digestion procedures. Using the Roberts and Clark method, a 0.5 ml aliquot of blood is collected and transferred to a digestion tube containing 1 ml concentrated HNO_3. The blood is then digested at 110 °C for 4 hours. The sample is reduced in volume by continued heating, and 0.5 ml 30% H_2O_2 is added as the sample dries. The residue is dissolved in 5 ml dilute (1%) HNO_3, and 20 µl of sample is then analyzed by graphite-furnace AAS with deuterium-background correction.

The current trend in the preparation of blood samples is to dilute the sample and add matrix modifiers to reduce background interference, rather than digesting the sample to reduce organic content. The method of Stoeppler and Brandt (1980), and the abbreviated procedure published in the American Public Health Association's (APHA) *Methods for Biological Monitoring* (1988), are straightforward and are nearly identical. For the APHA method, a small aliquot (50–300 µl) of whole blood that has been stabilized with ethylenediaminetetraacetate (EDTA) is added to 1.0 ml 1MHNO_3, vigorously shaken and centrifuged. Aliquots (10–25 µl) of the supernatant then are then analyzed by graphite-furnace AAS with appropriate background correction.

Using the method of Stoeppler and Brandt (1980), aliquots (50–200 µl) of whole blood that have been stabilized with EDTA are pipetted into clean polystyrene tubes and mixed with 150-600 µl of 1 M HNO_3. After vigorous shaking, the solution is centrifuged and a 10–25 µl aliquot of the supernatant then is analyzed by graphite-furnace AAS with appropriate background correction.

Claeys-Thoreau (1982) and DeBenzo et al. (1990) diluted blood samples at a ratio of 1:10 with a matrix modifier (0.2% Triton X-100, a wetting agent) for direct determinations of CDB. DeBenzo et al. also demonstrated that aqueous standards of cadmium, instead of spiked, whole-blood samples, could be used to establish calibration curves if standards and samples are treated with additional small volumes of matrix modifiers (i.e., 1% HNO_3, 0.2% ammonium hydrogenphosphate and 1 mg/ml magnesium salts).

These direct dilution procedures for CDB analysis are simple and rapid. Laboratories can process more than 100 samples a day using a dedicated graphite-furnace AAS, an auto-sampler, and either a Zeeman- or a deuterium-background correction system. Several authors emphasize using optimum settings for graphite-furnace temperatures during the drying, charring, and atomization processes associated with the flameless AAS method, and the need to run frequent QC samples when performing automated analysis.

5.1.3 Sample Collection and Handling

Sample collection procedures are addressed primarily to identify ways to minimize the degree of variability that may be introduced by sample collection during medical monitoring. It is unclear at this point the extent to which collection procedures contribute to variability among CDB samples. Sources of variation that may result from sampling procedures include time-of-day effects and introduction of external contamination during the collection process. To minimize these sources, strict adherence to a sample collection protocol is recommended. Such a protocol must include provisions for thorough cleaning of the site from which blood will be extracted; also, every effort should be made to collect samples near the same time of day. It is also important to recognize that under the recent OSHA blood-borne pathogens standard (29 CFR 1910.1030), blood samples and certain body fluids must be handled and treated as if they are infectious.

5.1.4 Best Achievable Performance

The best achievable performance using a particular method for CDB determinations is assumed to be equivalent to the performance reported by research laboratories in which the method was developed.

For their method, Roberts and Clark (1986) demonstrated a limit of detection of 0.4 µg Cd/l in whole blood, with a linear response curve from 0.4 to 16.0 µg Cd/l. They report a coefficient of variation (CV) of 6.7% at 8.0 µg/l.

The APHA (1988) reports a range of 1.0–25 µg/l, with a CV of 7.3% (concentration not stated). Insufficient documentation was available to critique this method.

Stoeppler and Brandt (1980) achieved a detection limit of 0.2 µg Cd/l whole blood, with a linear range of 0.4–12.0 µg Cd/l, and a CV of 15–30%, for samples at <1.0 µg/l. Improved precision (CV of 3.8%) was reported for CDB concentrations at 9.3 µg/l.

5.1.5 General Method Performance

For any particular method, the performance expected from commercial laboratories may be somewhat lower than that reported by the research laboratory in which the method was developed. With participation in appropriate proficiency programs and use of a proper in-house QA/QC program incorporating provisions for regular corrective actions, the performance of commercial laboratories is expected to approach that reported by research laboratories. Also, the results reported for existing proficiency programs serve as a gauge of the likely level of performance that currently can be expected from commercial laboratories offering these analyses.

Weber (1988) reports on the results of the proficiency program run by the Centre de Toxicologie du Quebec (CTQ). As indicated previously, participants in that program receive 18 blood samples per year having cadmium concentrations ranging from 0.2–20 µg/l. Currently, 76 laboratories are participating in this program. The program is established for several analytes in addition to cadmium, and not all of these laboratories participate in the cadmium proficiency-testing program.

Under the CTQ program, cadmium results from individual laboratories are compared against the consensus mean derived for each sample. Results indicate that after receiving 60 samples (i.e., after participation for approximately three years), 60% of the laboratories in the program are able to report results that fall within ±1 µg/l or 15% of the mean, whichever is greater. (For this procedure, the 15% criterion was applied to concentrations exceeding 7 µg/l.) On any single sample of the last 20 samples, the percentage of laboratories falling within the specified range is between 55 and 80%.

The CTQ also evaluates the performance of participating laboratories against a less severe standard: ±2 µg/l or 15% of the mean, whichever is greater (Weber 1988); 90% of participating laboratories are able to satisfy this standard after approximately 3 years in the program. (The 15% criterion is used for concentrations in excess of 13 µg/l.) On any single sample of the last 15 samples, the percentage of laboratories falling within the specified range is between 80 and 95% (except for a single test for which only 60% of the laboratories achieved the desired performance).

Based on the data presented in Weber (1988), the CV for analysis of CDB is nearly constant at 20% for cadmium concentrations exceeding 5 µg/l, and increases for cadmium concentrations below 5 µg/l. At 2 µg/l, the reported CV rises to approximately 40%. At 1 µg/l, the reported CV is approximately 60%.

Participating laboratories also tend to overestimate concentrations for samples exhibiting concentrations less than 2 µg/l (see Figure 11 of Weber 1988). This problem is due in part to the proficiency evaluation criterion that allows reporting a minimum ±2.0 µg/l for evaluated CDB samples. There is currently little economic or regulatory incentive for laboratories participating in the CTQ program to achieve greater accuracy for CDB samples containing cadmium at concentrations less than 2.0 µg/l, even if the laboratory has the experience and competency to distinguish among lower concentrations in the samples obtained from the CTQ.

The collective experience of international agencies and investigators demonstrate the need for a vigorous QC program to ensure that CDB values reported by participating laboratories are indeed reasonably accurate. As Friberg (1988) stated:

"Information about the quality of published data has often been lacking. This is of concern as assessment of metals in trace concentrations in biological media are fraught with difficulties from the collection, handling, and storage of samples to the chemical analyses. This has been proven over and over again from the results of interlaboratory testing and quality control exercises. Large variations in results were reported even from 'experienced' laboratories."

The UNEP/WHO global study of cadmium biological monitoring set a limit for CDB accuracy using the maximum allowable deviation method at $Y=X\pm(0.1X+1)$ for a targeted concentration of 10 µg Cd/l (Friberg and Vahter 1983). The performance of participating laboratories over a concentration range of 1.5–12 µg/l was reported by Lind et al. (1987). Of the 3 QC runs conducted during 1982 and 1983, 1 or 2 of the 6 laboratories failed each run. For the years 1983 and 1985, between zero and 2 laboratories failed each of the consecutive QC runs.

In another study (Vahter and Friberg 1988), QC samples consisting of both external (unknown) and internal (stated) concentrations were distributed to laboratories participating in the epidemiology research. In this study, the maximum acceptable deviation between the regression analysis of reported results and reference values was set at $Y=X\pm(0.05X+0.2)$ for a concentration range of 0.3–5.0 µg Cd/l. It is reported that only 2 of 5 laboratories had acceptable data after the first QC set, and only 1 of 5 laboratories had acceptable data after the second QC set. By the fourth QC set, however, all 5 laboratories were judged proficient.

The need for high quality CDB monitoring is apparent when the toxicological and biological characteristics of this metal are considered; an increase in CDB from 2 to 4 µg/l could cause a doubling of the cadmium accumulation in the kidney, a critical target tissue for selective cadmium accumulation (Nordberg and Nordberg 1988).

Historically, the CDC's internal QC program for CDB cadmium monitoring program has found achievable accuracy to be ±10% of the true value at CDB concentrations ≥5.0 µg/l (Paschal 1990). Data on the performance of laboratories participating in this program currently are not available.

5.1.6 Observed CDB Concentrations

As stated in Section 4.3, CDB concentrations are representative of ongoing levels of exposure to cadmium. Among those who have been exposed chronically to cadmium for extended periods, however, CDB may contain a component attributable to the general cadmium body burden.

5.1.6.1 *CDB Concentrations Among Unexposed Samples*

Numerous studies have been conducted examining CDB concentrations in the general population, and in control groups used for comparison with cadmium-exposed workers. A number of reports have been published that present erroneously high values of CDB (Nordberg and Nordberg 1988). This problem was due to contamination of samples during sampling and analysis, and to errors in analysis. Early AAS methods were not sufficiently sensitive to accurately estimate CDB concentrations.

Table 4 presents results of recent studies reporting CDB levels for the general U.S. population not exposed occupationally to cadmium. Other surveys of tissue cadmium using U.S. samples and conducted as part of a cooperative effort among Japan, Sweden and the U.S., did not collect CDB data because standard analytical methodologies were unavailable, and because of analytic problems (Kjellstrom 1979; SWRI 1978).

TABLE 4.—BLOOD CADMIUM CONCENTRATIONS OF U.S. POPULATION NOT OCCUPATIONALLY EXPOSED TO CADMIUM [a]

Study No.	No. in study (n)	Sex	Age	Smoking habits [b]	Arithmetic mean (±S.D.) [c]	Absolute range or (95% CI) [d]	Geometric mean (GSD) [e]	Lower 95th percentile of distribution [f]	Upper 95th percentile of distribution [f]	Reference
1	80	M	4 to 69	NS,S	1.13	0.35–3.3	0.98±1.71	0.4	2.4	Kowal et al. (1979).
	88	F	4 to 69	NS,S	1.03	0.21–3.3	0.91±1.63	0.4	2.0	
	115	M/F	4 to 69	NS	0.95	0.21–3.3	0.85±1.59	0.4	1.8	
	31	M/F	4 to 69	S	1.54	0.4–3.3	1.37±1.65	0.6	3.2	
2	10	M	Adults	(?)	2.0±2.1	(0.5–5.0)		[g] (0)	[g] (5.8)	Ellis et al. (1983).
3	24	M	Adults	NS			0.6±1/87	0.2	1.8	Frieberg and Vahter (1983).
	20	M	Adults	S			1.2±2.13	0.3	4.4	
	64	F	Adults	NS			0.5±1.85	0.2	1.4	
	39	F	Adults	S			0.8±2.22	0.2	3.1	
4	32	M	Adults	S,NS			1.2±2.0	0.4	3.9	Thun et al. (1989).
5	35	M	Adults	(?)	2.1±2.1	(0.5–7.3)		[g] (0)	[g] (5.6)	Mueller et al. (1989).

[a] Concentrations reported in µg Cd/l blood unless otherwise stated.
[b] NS—never smoked; S—current cigarette smoker.
[c] A.S.D.—Arithmetic Standard Deviation.
[d] C.I.—Confidence Interval.
[e] G.S.D.—Geometric Standard Deviation.
[f] Based on assumed lognormal distribution.
[g] Based on assumed normal distribution.

Arithmetic and/or geometric means and standard deviations are provided in Table 4 for measurements among the populations defined in each study listed. The range of reported measurements and/or the 95% upper and lower confidence intervals for the means are presented when this information was reported in a study. For studies reporting either an arithmetic or geometric standard deviation along with a mean, the lower and upper 95th percentile for the distribution also were derived and reported in the table.

The data provided in Table 4 from Kowal et al. (1979) are from studies conducted between 1974 and 1976 evaluating CDB levels for the general population in Chicago, and are considered to be representative of the U.S. population. These studies indicate that the average CDB concentration among those not occupationally exposed to cadmium is approximately 1 µg/l.

In several other studies presented in Table 4, measurements are reported separately for males and females, and for smokers and nonsmokers. The data in this table indicate that similar CDB levels are observed among males and females in the general population, but that smokers tend to exhibit higher CDB levels than nonsmokers. Based on the Kowal et al. (1979) study, smokers not occupationally exposed to cadmium exhibit an average CDB level of 1.4 µg/l.

In general, nonsmokers tend to exhibit levels ranging to 2 µg/l, while levels observed among smokers range to 5 µg/l. Based on the data presented in Table 4, 95% of those not occupationally exposed to cadmium exhibit CDB levels less than 5 µg/l.

5.1.6.2 CDB *Concentrations Among Exposed Workers*

Table 5 is a summary of results from studies reporting CDB levels among workers exposed to cadmium in the work place. As in Table 4, arithmetic and/or geometric means and standard deviations are provided if reported in the listed studies. The absolute range, or the 95% confidence interval around the mean, of the data in each study are provided when reported. In addition, the lower and upper 95th percentile of the distribution are presented for each study in which a mean and corresponding standard deviation were reported. Table 5 also provides estimates of the duration, and level, of exposure to cadmium in the work place if these data were reported in the listed studies. The data presented in Table 5 suggest that CDB levels are dose related. Sukuri et al. (1983) show that higher CDB levels are observed among workers experiencing higher work place exposure. This trend appears to be true of every one of the studies listed in the table.

CDB levels reported in Table 5 are higher among those showing signs of cadmium-related kidney damage than those showing no such damage. Lauwerys et al. (1976) report CDB levels among workers with kidney lesions that generally are above the levels reported for workers without kidney lesions. Ellis et al. (1983) report a similar observation comparing workers with and without renal dysfunction, although they found more overlap between the 2 groups than Lauwerys et al.

TABLE 5—BLOOD CADMIUM IN WORKERS EXPOSED TO CADMIUM IN THE WORKPLACE

Study number	Work environment (worker population monitored)	Number in study	Employment in years (mean)	Mean concentration of cadmium in air (µg/m³)	Concentrations of Cadmium in blood[a]					
					Arithmetic mean (±S.D.)[b]	Absolute range or (95% C.I.)[c]	Geometric mean (GSD)[d]	Lower 95th percentile of range[e] ( )[f]	Upper 95th percentile of range[e] ( )[f]	Reference
1	Ni-Cd battery plant and Cd production plant:		3–40	≤90						Lauwerys et al. 1976.
	(Workers without kidney lesions)	96			21.4±1.9			(18)	(25)	
	(Workers with kidney lesions)	25			38.8±3.8			(32)	(45)	
2	Ni-Cd battery plant:									Adamsson et al. (1979).
	(Smokers)	7	(5)	10.1	22.7	7.3–67.2				
	(Nonsmokers)	8	(9)	7.0	7.0	4.9–10.5				
3	Cadmium alloy plant:									Sukuri et al. 1982.
	(High exposure group)	7	(10.6)	[1,000–5 yrs;	20.8±7.1			(7.3)	(34)	
	(Low exposure group)	9	(7.3)	40–5 yrs]	7.1±1.1			(5.1)	(9.1)	
4	Retrospective study of workers with renal problems:	19	15–41							Roels et al. 1982.
	(Before removal)		(27.2)		39.9±3.7	11–179		(34)	(46)	
	(After removal)		(4.2)[g]		14.1±5.6	5.7–27.4		(4.4)	(24)	
5	Cadmium production plant:									Ellis et al. 1983.
	(Workers without renal dysfunction)	33	1–34		15±5.7	7–31		(5.4)	(25)	
	(Workers with renal dysfunction)	18	10–34		24±8.5	10–34		(9.3)	(39)	
6	Cd-Cu alloy plant	75	Up to 39				8.8±1.1	7.5	10	Mason et al. 1988.
7	Cadmium recovery operation—Current (19) and former (26) workers.	45	(19.0)				7.9±2.0	2.5	25	Thun et al. 1989.
8	Cadmium recovery operation	40			10.2±5.3	2.2–18.8		(1.3)	(19)	Mueller et al. 1989.

[a] Concentrations reported in µg Cd/l blood unless otherwise stated.
[b] S.D.—Standard Deviation.
[c] C.I.—Confidence Interval.
[d] G.S.D.—Geometric Standard Deviation.
[e] Based on assumed lognormal distribution.
[f] Based on assumed normal distribution.
[g] Years following removal.

The data in Table 5 also indicate that CDB levels are higher among those experiencing current occupational exposure than those who have been removed from such exposure. Roels et al. (1982) indicate that CDB levels observed among workers experiencing ongoing exposure in the work place are almost entirely above levels observed among workers removed from such exposure. This finding suggests that CDB levels decrease once cadmium exposure has ceased.

A comparison of the data presented in Tables 4 and 5 indicates that CDB levels observed among cadmium-exposed workers is significantly higher than levels observed among the unexposed groups. With the exception of 2 studies presented in Table 5 (1 of which includes former workers in the sample group tested), the lower 95th percentile for CDB levels among exposed workers are greater than 5 µg/l, which is the value of the upper 95th percentile for CDB levels observed among those who are not occupationally exposed. Therefore, a CDB level of 5 µg/l represents a threshold above which significant work place exposure to cadmium may be occurring.

5.1.7 Conclusions and Recommendations for CDB

Based on the above evaluation, the following recommendations are made for a CDB proficiency program.

5.1.7.1 *Recommended Method*

The method of Stoeppler and Brandt (1980) should be adopted for analyzing CDB. This method was selected over other methods for its straightforward sample-preparation procedures, and because limitations of the method were described adequately. It also is the method used by a plurality of laboratories currently participating in the CTQ proficiency program. In a recent CTQ interlaboratory comparison report (CTQ 1991), analysis of the methods used by laboratories to measure CDB indicates that 46% (11 of 24) of the participating laboratories used the Stoeppler and Brandt methodology (HNO_3 deproteinization of blood followed by analysis of the supernatant by GF–AAS). Other CDB methods employed by participating laboratories identified in the CTQ report include dilution of blood (29%), acid digestion (12%) and miscellaneous methods (12%).

Laboratories may adopt alternate methods, but it is the responsibility of the laboratory to demonstrate that the alternate methods meet the data quality objectives defined for the Stoeppler and Brandt method (see section 5.1.7.2 below).

5.1.7.2 *Data Quality Objectives*

Based on the above evaluation, the following data quality objectives (DQOs) should facilitate interpretation of analytical results.

Limit of Detection. 0.5 µg/l should be achievable using the Stoeppler and Brandt method. Stoeppler and Brandt (1980) report a limit of detection equivalent to ≤0.2 µg/l in whole blood using 25 µl aliquots of deproteinized, diluted blood samples.

Accuracy. Initially, some of the laboratories performing CDB measurements may be expected to satisfy criteria similar to the less severe criteria specified by the CTQ program, i.e., measurements within 2 µg/l or 15% (whichever is greater) of the target value. About 60% of the laboratories enrolled in the CTQ program could meet this criterion on the first proficiency test (Weber 1988).

Currently, approximately 12 laboratories in the CTQ program are achieving an accuracy for CDB analysis within the more severe constraints of ±1 µg/l or 15% (whichever is greater). Later, as laboratories gain experience, they should achieve the level of accuracy exhibited by these 12 laboratories. The experience in the CTQ program has shown that, even without incentives, laboratories benefit from the feedback of the program; after they have analyzed 40–50 control samples from the program, performance improves to the point where about 60% of the laboratories can meet the stricter criterion of ±1 µg/l or 15% (Weber 1988). Thus, this stricter target accuracy is a reasonable DQO.

Precision. Although Stoeppler and Brandt (1980) suggest that a coefficient of variation (CV) near 1.3% (for a 10 µg/l concentration) is achievable for within-run reproducibility, it is recognized that other factors affecting within- and between-run comparability will increase the achievable CV. Stoeppler and Brandt (1980) observed CVs that were as high as 30% for low concentrations (0.4 µg/l), and CVs of less than 5% for higher concentrations.

For internal QC samples (see section 3.3.1), laboratories should to attain an overall precision near 25%. For CDB samples with concentrations less than 2 µg/l, a target precision of 40% is reasonable, while precisions of 20% should be achievable for concentrations greater than 2 µg/l. Although these values are more strict than values observed in the CTQ interlaboratory program reported by Webber (1988), they are within the achievable limits reported by Stoeppler and Brandt (1980).

5.1.7.3 *Quality Assurance/Quality Control*

Commercial laboratories providing measurement of CDB should adopt an internal QA/QC program that incorporates the following components: Strict adherence to the selected method, including all calibration requirements; regular incorporation of QC samples during actual runs; a protocol for corrective actions, and documentation of these actions; and, participation in an interlaboratory proficiency program. Note that the nonmandatory QA/QC program presented in Attachment 1 is based on the Stoeppler and Brandt method for CDB analysis. Should an alternate method be adopted, the laboratory should develop a QA/QC program satisfying the provisions of Section 3.3.1.

5.2 Measuring Cadmium in Urine (CDU)

As in the case of CDB measurement, proper determination of CDU requires strict analytical discipline regarding collection and handling of samples. Because cadmium is both ubiquitous in the environment and employed widely in coloring agents for industrial products that may be used during sample collection, preparation and analysis, care should be exercised to ensure that samples are not contaminated during the sampling procedure.

Methods for CDU determination share many of the same features as those employed for the determination of CDB. Thus, changes and improvements to methods for measuring CDU over the past 40 years parallel those used to monitor CDB. The direction of development has largely been toward the simplification of sample preparation techniques made possible because of improvements in analytic techniques.

5.2.1 Units of CDU Measurement

Procedures adopted for reporting CDU concentrations are not uniform. In fact, the situation for reporting CDU is more complicated than for CDB, where concentrations are normalized against a unit volume of whole blood.

Concentrations of solutes in urine vary with several biological factors (including the time since last voiding and the volume of liquid consumed over the last few hours); as a result, solute concentrations should be normalized against another characteristic of urine that represents changes in solute concentrations. The 2 most common techniques are either to standardize solute concentrations against the concentration of creatinine, or to standardize solute concentrations against the specific gravity of the urine. Thus, CDU concentrations have been reported in the literature as "uncorrected" concentrations of cadmium per volume of urine (i.e., µg Cd/l urine), "corrected" concentrations of cadmium per volume of urine at a standard specific gravity (i.e., µg Cd/l urine at a specific gravity of 1.020), or "corrected" mass concentration per unit mass of creatinine (i.e., µg Cd/g creatinine). (CDU concentrations [whether uncorrected or corrected for specific gravity, or normalized to creatinine] occasionally are reported in nanomoles [i.e., nmoles] of cadmium per unit mass or volume. In this protocol, these values are converted to µg of cadmium per unit mass or volume using 89 nmoles of cadmium=10 µg.)

While it is agreed generally that urine values of analytes should be normalized for reporting purposes, some debate exists over what correction method should be used. The medical community has long favored normalization based on creatinine concentration, a common urinary constituent. Creatinine is a normal product of tissue catabolism, is excreted at a uniform rate, and the total amount excreted per day is constant on a day-to-day basis (NIOSH 1984b). While this correction method is accepted widely in Europe, and within some occupational health circles, Kowals (1983) argues that the use of specific gravity (i.e., total solids per unit volume) is more straightforward and practical (than creatinine) in adjusting CDU values for populations that vary by age or gender.

Kowals (1983) found that urinary creatinine (CRTU) is lower in females than males, and also varies with age. Creatinine excretion is highest in younger males (20–30 years old), decreases at middle age (50–60 years), and may rise slightly in later years. Thus, cadmium concentrations may be underestimated for some workers with high CRTU levels.

Within a single void urine collection, urine concentration of any analyte will be affected

by recent consumption of large volumes of liquids, and by heavy physical labor in hot environments. The absolute amount of analyte excreted may be identical, but concentrations will vary widely so that urine must be corrected for specific gravity (i.e., to normalize concentrations to the quantity of total solute) using a fixed value (e.g., 1.020 or 1.024). However, since heavy-metal exposure may increase urinary protein excretion, there is a tendency to underestimate cadmium concentrations in samples with high specific gravities when specific-gravity corrections are applied.

Despite some shortcomings, reporting solute concentrations as a function of creatinine concentration is accepted generally; OSHA therefore recommends that CDU levels be reported as the mass of cadmium per unit mass of creatinine (µg/g CTRU).

Reporting CDU as µg/g CRTU requires an additional analytical process beyond the analysis of cadmium: Samples must be analyzed independently for creatinine so that results may be reported as the ratio of cadmium to creatinine concentrations found in the urine sample. Consequently, the overall quality of the analysis depends on the combined performance by a laboratory on these 2 determinations. The analysis used for CDU determinations is addressed below in terms of µg Cd/l, with analysis of creatinine addressed separately. Techniques for assessing creatinine are discussed in Section 5.4.

Techniques for deriving cadmium as a ratio of CRTU, and the confidence limits for independent measurements of cadmium and CRTU, are provided in Section 3.3.3.

5.2.2 Analytical Techniques Used to Monitor CDU

Analytical techniques used for CDU determinations are similar to those employed for CDB determinations; these techniques are summarized in Table 3. As with CDB monitoring, the technique most suitable for CDU determinations is atomic absorption spectroscopy (AAS). AAS methods used for CDU determinations typically employ a graphite furnace, with background correction made using either the deuterium-lamp or Zeeman techniques; Section 5.1.1 provides a detailed description of AAS methods.

5.2.3 Methods Developed for CDU Determinations

Princi (1947), Smith et al. (1955), Smith and Kench (1957), and Tsuchiya (1967) used colorimetric procedures similar to those described in the CDB section above to estimate CDU concentrations. In these methods, urine (50 ml) is reduced to dryness by heating in a sand bath and digested (wet ashed) with mineral acids. Cadmium then is complexed with dithiazone, extracted with chloroform and quantified by spectrophotometry. These early studies typically report reagent blank values equivalent to 0.3 µg Cd/l, and CDU concentrations among nonexposed control groups at maximum levels of 10 µg Cd/l—erroneously high values when compared to more recent surveys of cadmium concentrations in the general population.

By the mid-1970s, most analytical procedures for CDU analysis used either wet ashing (mineral acid) or high temperatures (>400 °C) to digest the organic matrix of urine, followed by cadmium chelation with APDC or DDTC solutions and extraction with MIBK. The resulting aliquots were analyzed by flame or graphite-furnace AAS (Kjellstrom 1979).

Improvements in control over temperature parameters with electrothermal heating devices used in conjunction with flameless AAS techniques, and optimization of temperature programs for controlling the drying, charring, and atomization processes in sample analyses, led to improved analytical detection of diluted urine samples without the need for sample digestion or ashing. Roels et al. (1978) successfully used a simple sample preparation, dilution of 1.0 ml aliquots of urine with 0.1 N HNO_3, to achieve accurate low-level determinations of CDU.

In the method described by Pruszkowska et al. (1983), which has become the preferred method for CDU analysis, urine samples were diluted at a ratio of 1:5 with water; diammonium hydrogenphosphate in dilute HNO_3 was used as a matrix modifier. The matrix modifier allows for a higher charring temperature without loss of cadmium through volatilization during pre-atomization. This procedure also employs a stabilized temperature platform in a graphite furnace, while nonspecific background absorbtion is corrected using the Zeeman technique. This method allows for an absolute detection limit of approximately 0.04 µg Cd/l urine.

5.2.4 Sample Collection and Handling

Sample collection procedures for CDU may contribute to variability observed among CDU measurements. Sources of variation attendant to sampling include time-of-day, the interval since ingestion of liquids, and the introduction of external contamination during the collection process. Therefore, to minimize contributions from these variables, strict adherence to a sample-collection protocol is recommended. This a protocol should include provisions for normalizing the conditions under which urine is collected. Every effort also should be made to collect samples during the same time of day.

Collection of urine samples from an industrial work force for biological monitoring purposes usually is performed using "spot" (i.e., single-void) urine with the pH of the sample determined immediately. Logistic and sample-integrity problems arise when efforts are made to collect urine over long periods (e.g., 24 hrs). Unless single-void urines are used, there are numerous opportunities for measurement error because of poor control over sample collection, storage and environmental contamination.

To minimize the interval during which sample urine resides in the bladder, the following adaption to the "spot" collection procedure is recommended: The bladder should first be emptied, and then a large glass of water should be consumed; the sample may be collected within an hour after the water is consumed.

5.2.5 Best Achievable Performance

Performance using a particular method for CDU determinations is assumed to be equivalent to the performance reported by the research laboratories in which the method was developed. Pruszkowska et al. (1983) report a detection limit of 0.04 µg/l CDU, with a CV of <4% between 0–5 µg/l. The CDC reports a minimum CDU detection limit of 0.07 µg/l using a modified method based on Pruszkowska et al. (1983). No CV is stated in this protocol; the protocol contains only rejection criteria for internal QC parameters used during accuracy determinations with known standards (Attachment 8 of exhibit 106 of OSHA docket H057A). Stoeppler and Brandt (1980) report a CDU detection limit of 0.2 µg/l for their methodology.

5.2.6 General Method Performance

For any particular method, the expected initial performance from commercial laboratories may be somewhat lower than that reported by the research laboratory in which the method was developed. With participation in appropriate proficiency programs, and use of a proper in-house QA/QC program incorporating provisions for regular corrective actions, the performance of commercial laboratories may be expected to improve and approach that reported by a research laboratories. The results reported for existing proficiency programs serve to specify the initial level of performance that likely can be expected from commercial laboratories offering analysis using a particular method.

Weber (1988) reports on the results of the CTQ proficiency program, which includes CDU results for laboratories participating in the program. Results indicate that after receiving 60 samples (i.e., after participating in the program for approximately 3 years), approximately 80% of the participating laboratories report CDU results ranging between ±2 µg/l or 15% of the consensus mean, whichever is greater. On any single sample of the last 15 samples, the proportion of laboratories falling within the specified range is between 75 and 95%, except for a single test for which only 60% of the laboratories reported acceptable results. For each of the last 15 samples, approximately 60% of the laboratories reported results within ±1 µg or 15% of the mean, whichever is greater. The range of concentrations included in this set of samples was not reported.

Another report from the CTQ (1991) summarizes preliminary CDU results from their 1991 interlaboratory program. According to the report, for 3 CDU samples with values of 9.0, 16.8, 31.5 µg/l, acceptable results (target ±2 µg/l or 15% of the consensus mean, whichever is greater) were achieved by only 44–52% of the 34 laboratories participating in the CDU program. The overall CVs for these 3 CDU samples among the 34 participating laboratories were 31%, 25%, and 49%, respectively. The reason for this poor performance has not been determined.

A more recent report from the CTQ (Weber private communication) indicates that 36% of the laboratories in the program have been able to achieve the target of ±1 µg/l or 15% for more than 75% of the samples analyzed over the last 5 years, while 45% of participating laboratories achieved a target of

±2 µg/l or 15% for more than 75% of the samples analyzed over the same period.

Note that results reported in the interlaboratory programs are in terms of µg Cd/l of urine, unadjusted for creatinine. The performance indicated, therefore, is a measure of the performance of the cadmium portion of the analyses, and does not include variation that may be introduced during the analysis of CRTU.

5.2.7 Observed CDU Concentrations

Prior to the onset of renal dysfunction, CDU concentrations provide a general indication of the exposure history (i.e., body burden)(see Section 4.3). Once renal dysfunction occurs, CDU levels appear to increase and are no longer indicative solely of cadmium body burden (Friberg and Elinder 1988).

5.2.7.1 *Range of CDU Concentrations Observed Among Unexposed Samples*

Surveys of CDU concentrations in the general population were first reported from cooperative studies among industrial countries (i.e., Japan, U.S. and Sweden) conducted in the mid-1970s. In summarizing these data, Kjellstrom (1979) reported that CDU concentrations among Dallas, Texas men (age range: <9–59 years; smokers and nonsmokers) varied from 0.11–1.12 µg/l (uncorrected for creatinine or specific gravity). These CDU concentrations are intermediate between population values found in Sweden (range: 0.11–0.80 µg/l) and Japan (range: 0.14–2.32 µg/l).

Kowal and Zirkes (1983) reported CDU concentrations for almost 1,000 samples collected during 1978–79 from the general U.S. adult population (i.e., nine states; both genders; ages 20–74 years). They report that CDU concentrations are lognormally distributed; low levels predominated, but a small proportion of the population exhibited high levels. These investigators transformed the CDU concentrations values, and reported the same data 3 different ways: µg/l urine (unadjusted), µg/l (specific gravity adjusted to 1.020), and µg/g CRTU. These data are summarized in Tables 6 and 7.

Based on further statistical examination of these data, including the lifestyle characteristics of this group, Kowal (1988) suggested increased cadmium absorption (i.e., body burden) was correlated with low dietary intakes of calcium and iron, as well as cigarette smoking.

CDU levels presented in Table 6 are adjusted for age and gender. Results suggest that CDU levels may be slightly different among men and women (i.e., higher among men when values are unadjusted, but lower among men when the values are adjusted, for specific gravity or CRTU). Mean differences among men and women are small compared to the standard deviations, and therefore may not be significant. Levels of CDU also appear to increase with age. The data in Table 6 suggest as well that reporting CDU levels adjusted for specific gravity or as a function of CRTU results in reduced variability.

TABLE 6—URINE CADMIUM CONCENTRATIONS IN THE U.S. ADULT POPULATION: NORMAL AND CONCENTRATION-ADJUSTED VALUES BY AGE AND SEX [1]

	Geometric means (and geometric standard deviations)		
	Unadjusted (µg/l)	SG-adjusted [2] (µg/l at 1.020)	Creatine-adjusted (µg/g)
Sex:			
Male (n=484)	0.55 (2.9)	0.73 (2.6)	0.55 (2.7)
Female (n=498)	0.49 (3.0)	0.86 (2.7)	0.78 (2.7)
Age:			
20–29 (n=222)	0.32 (3.0)	0.43 (2.7)	0.32 (2.7)
30–39 (n=141)	0.46 (3.2)	0.70 (2.8)	0.54 (2.7)
40–49 (n=142)	0.50 (3.0)	0.81 (2.6)	0.70 (2.7)
50–59 (n=117)	0.61 (2.9)	0.99 (2.4)	0.90 (2.3)
60–69 (n=272)	0.76 (2.6)	1.16 (2.3)	1.03 (2.3)

[1] From Kowal and Zirkes 1983.
[2] SC-adjusted is adjusted for specific gravity.

TABLE 7—URINE CADMIUM CONCENTRATIONS IN THE U.S. ADULT POPULATION: CUMULATIVE FREQUENCY DISTRIBUTION OF URINARY CADMIUM (N=982) [1]

[in percentage]

Range of concentrations	Unadjusted (µg/l)	SG-adjusted (µg/l at 1.020)	Creatine-adjusted (µg/g)
<0.5	43.9	28.0	35.8
0.6–1.0	71.7	56.4	65.6
1.1–1.5	84.4	74.9	81.4
1.6–2.0	91.3	84.7	88.9
2.1–3.0	97.3	94.4	95.8
3.1–4.0	98.8	97.4	97.2
4.1–5.0	99.4	98.2	97.9
5.1–10.0	99.6	99.4	99.3
10.0–20.0	99.8	99.6	99.6

[1] Source: Kowal and Zirkes (1983).

The data in the Table 6 indicate the geometric mean of CDU levels observed among the general population is 0.52 µg Cd/l urine (unadjusted), with a geometric standard deviation of 3.0. Normalized for creatinine, the geometric mean for the population is 0.66 µg/g CRTU, with a geometric standard deviation of 2.7. Table 7 provides the distributions of CDU concentrations for the general population studied by Kowal and Zirkes. The data in this table indicate that 95% of the CDU levels observed among those not occupationally exposed to cadmium are below 3 µg/g CRTU.

5.2.7.2 *Range of CDU Concentrations Observed Among Exposed Workers*

Table 8 is a summary of results from available studies of CDU concentrations observed among cadmium-exposed workers. In this table, arithmetic and/or geometric means and standard deviations are provided if reported in these studies. The absolute range for the data in each study, or the 95%

confidence interval around the mean of each study, also are provided when reported. The lower and upper 95th percentile of the distribution are presented for each study in which a mean and corresponding standard deviation were reported. Table 8 also provides estimates of the years of exposure, and the levels of exposure, to cadmium in the work place if reported in these studies. Concentrations reported in this table are in μg/g CRTU, unless otherwise stated.

TABLE 8—URINE CADMIUM CONCENTRATIONS IN WORKERS EXPOSED TO CADMIUM IN THE WORKPLACE

Study number	Work environment (worker population monitored)	Number in Study (n)	Employment in years (mean)	Mean Concentration of cadmium in air (µg/m³)	Concentration of cadmium in Urine[a]					
					Arithmetic mean (±S.D.)[b]	Absolute range or (95% C.I.)[c]	Geometric mean (GSD)[d]	Lower 95th percentile of range[e] ( )[f]	Upper 95th percentile of range[e] ( )[f]	Reference
1	Ni-Cd battery plant and Cd production plant.		3–40	≤ 90						Lauwerys et al. 1976.
	(Workers without kidney lesions).	96			16.3±16.7			(0)	(44)	
	(Workers with kidney lesions)	25			48.2±42.6			(0)	(120)	
2	Ni-Cd battery plant									Adamsson et al. (1979).
	(Smokers)	7	(5)	10.1	5.5	1.0–14.7				
	(Nonsmokers)	8	(9)	7.0	3.6	0.5–9.3				
3	Cadmium salts production facility	148	(15.4)		15.8	2–150				Butchet et al. 1980.
4	Retrospective study of workers with renal problems.	19	15–41							Roels et al. 1982.
	(Before removal)		(27.2)		39.4±28.1	10.8–117		(0)	(88)	
	(After removal)		(4.2)[g]		16.4±9.0	80–42.3		(1.0)	(32)	
5	Cadmium production plant									Ellis et al. 1983.
	(Workers without renal dysfunction).	33	1–34		9.4±6.9	2-27		(0)	(21)	
	(Workers with renal dysfunction).	18	10–34		22.8±12.7	8–55		(1)	(45)	
6	Cd-Cu alloy plant	75	Up to 39	Note h	6.9±9.4			(0)	(23)	Mason et al. 1988.
7	Cadmium recovery operation	45	(19)	87	9.3±6.9			(0)	(21)	Thun et al. 1989.
8	Pigment manufacturing plant	29	(12.8)	0.18–3.0		0.2–9.5	1.1			Mueller et al. 1989.
9	Pigment manufacturing plant	26	(12.1)	≤3.0			1.25±2.45	0.3	6	Kawada et al. 1990.

[a] Concentrations are reported in µg/g Cr.
[b] S.D.—Standard Deviation.
[c] C.I.—Confidence Interval.
[d] G.S.D.—Geometric Standard Deviation.
[e] Based on assumed lognormal distribution.
[f] Based on assumed normal distribution.
[g] Years following removal.
[h] Equivalent to 50 for 20–22 yrs.

Data in Table 8 from Lauwerys et al. (1976) and Ellis et al. (1983) indicate that CDU concentrations are higher among those exhibiting kidney lesions or dysfunction than among those lacking these symptoms. Data from the study by Roels et al. (1982) indicate that CDU levels decrease among workers removed from occupational exposure to cadmium in comparison to workers experiencing ongoing exposure. In both cases, however, the distinction between the 2 groups is not as clear as with CDB; there is more overlap in CDU levels observed among each of the paired populations than is true for corresponding CDB levels. As with CDB levels, the data in Table 8 suggest increased CDU concentrations among workers who experienced increased overall exposure.

Although a few occupationally-exposed workers in the studies presented in Table 8 exhibit CDU levels below 3 µg/g CRTU, most of those workers exposed to cadmium levels in excess of the PEL defined in the final cadmium rule exhibit CDU levels above 3 µg/g CRTU; this level represents the upper 95th percentile of the CDU distribution observed among those who are not occupationally exposed to cadmium (Table 7).

The mean CDU levels reported in Table 8 among occupationally-exposed groups studied (except 2) exceed 3 µg/g CRTU. Correspondingly, the level of exposure reported in these studies (with 1 exception) are significantly higher than what workers will experience under the final cadmium rule. The 2 exceptions are from the studies by Mueller et al. (1989) and Kawada et al. (1990); these studies indicate that workers exposed to cadmium during pigment manufacture do not exhibit CDU levels as high as those levels observed among workers exposed to cadmium in other occupations. Exposure levels, however, were lower in the pigment manufacturing plants studied. Significantly, workers removed from occupational cadmium exposure for an average of 4 years still exhibited CDU levels in excess of 3 µg/g CRTU (Roels et al. 1982). In the single-exception study with a reported level of cadmium exposure lower than levels proposed in the final rule (i.e., the study of a pigment manufacturing plant by Kawada et al. 1990), most of the workers exhibited CDU levels less than 3 µg/g CRTU (i.e., the mean value was only 1.3 µg/g CRTU). CDU levels among workers with such limited cadmium exposure are expected to be significantly lower than levels of other studies reported on Table 8.

Based on the above data, a CDU level of 3 µg/g CRTU appear to represent a threshold above which significant work place exposure to cadmium occurs over the work span of those being monitored. Note that this threshold is not as distinct as the corresponding threshold described for CDB. In general, the variability associated with CDU measurements among exposed workers appears to be higher than the variability associated with CDB measurements among similar workers.

5.2.8 Conclusions and Recommendations for CDU

The above evaluation supports the following recommendations for a CDU proficiency program. These recommendations address only sampling and analysis procedures for CDU determinations specifically, which are to be reported as an unadjusted µg Cd/l urine. Normalizing this result to creatinine requires a second analysis for CRTU so that the ratio of the 2 measurements can be obtained. Creatinine analysis is addressed in Section 5.4. Formal procedures for combining the 2 measurements to derive a value and a confidence limit for CDU in µg/g CRTU are provided in Section 3.3.3.

5.2.8.1 *Recommended Method*

The method of Pruszkowska et al. (1983) should be adopted for CDU analysis. This method is recommended because it is simple, straightforward and reliable (i.e., small variations in experimental conditions do not affect the analytical results).

A synopsis of the methods used by laboratories to determine CDU under the interlaboratory program administered by the CTQ (1991) indicates that more than 78% (24 of 31) of the participating laboratories use a dilution method to prepare urine samples for CDU analysis. Laboratories may adopt alternate methods, but it is the responsibility of the laboratory to demonstrate that the alternate methods provide results of comparable quality to the Pruszkowska method.

5.2.8.2 *Data Quality Objectives*

The following data quality objectives should facilitate interpretation of analytical results, and are achievable based on the above evaluation.

Limit of Detection. A level of 0.5 µg/l (i.e., corresponding to a detection limit of 0.5 µg/g CRTU, assuming 1 g CRT/l urine) should be achievable. Pruszkowska et al. (1983) achieved a limit of detection of 0.04 µg/l for CDU based on the slope the the curve for their working standards (0.35 pg Cd/0.0044, A signal=1% absorbance using GF-AAS).

The CDC reports a minimum detection limit for CDU of 0.07 µg/l using a modified Pruszkowska method. This limit of detection was defined as 3 times the standard deviation calculated from 10 repeated measurements of a "low level" CDU test sample (Attachment 8 of exhibit 106 of OSHA docket H057A).

Stoeppler and Brandt (1980) report a limit of detection for CDU of 0.2 µg/l using an aqueous dilution (1:2) of the urine samples.

Accuracy. A recent report from the CTQ (Weber, private communication) indicates that 36% of the laboratories in the program achieve the target of ±1 µg/l or 15% for more than 75% of the samples analyzed over the last 5 years, while 45% of participating laboratories achieve a target of ±2 µg/l or 15% for more than 75% of the samples analyzed over the same period. With time and a strong incentive for improvement, it is expected that the proportion of laboratories successfully achieving the stricter level of accuracy should increase. It should be noted, however, these indices of performance do not include variations resulting from the ancillary measurement of CRTU (which is recommended for the proper recording of results). The low cadmium levels expected to be measured indicate that the analysis of creatinine will contribute relatively little to the overall variability observed among creatinine-normalized CDU levels (see Section 5.4). The initial target value for reporting CDU under this program, therefore, is set at ±1 µg/g CRTU or 15% (whichever is greater).

Precision. For internal QC samples (which are recommended as part of an internal QA/QC program, Section 3.3.1), laboratories should attain an overall precision of 25%. For CDB samples with concentrations less than 2 µg/l, a target precision of 40% is acceptable, while precisions of 20% should be achievable for CDU concentrations greater than 2 µg/l. Although these values are more stringent than those observed in the CTQ interlaboratory program reported by Webber (1988), they are well within limits expected to be achievable for the method as reported by Stoeppler and Brandt (1980).

5.2.8.3 *Quality Assurance/Quality Control*

Commercial laboratories providing CDU determinations should adopt an internal QA/QC program that incorporates the following components: Strict adherence to the selected method, including calibration requirements; regular incorporation of QC samples during actual runs; a protocol for corrective actions, and documentation of such actions; and, participation in an interlaboratory proficiency program. Note that the nonmandatory program presented in Attachment 1 as an example of an acceptable QA/QC program, is based on using the Pruszkowska method for CDU analysis. Should an alternate method be adopted by a laboratory, the laboratory should develop a QA/QC program equivalent to the nonmandatory program, and which satisfies the provisions of Section 3.3.1.

5.3 Monitoring β-2-Microglobulin in Urine (B2MU).

As indicated in Section 4.3, B2MU appears to be the best of several small proteins that may be monitored as early indicators of cadmium-induced renal damage. Several analytic techniques are available for measuring B2M.

5.3.1 Units of B2MU Measurement

Procedures adopted for reporting B2MU levels are not uniform. In these guidelines, OSHA recommends that B2MU levels be reported as µg/g CRTU, similar to reporting CDU concentrations. Reporting B2MU normalized to the concentration of CRTU requires an additional analytical process beyond the analysis of B2M: Independent analysis for creatinine so that results may be reported as a ratio of the B2M and creatinine concentrations found in the urine sample. Consequently, the overall quality of the analysis depends on the combined performance on these 2 analyses. The analysis used for B2MU determinations is described in terms of µg B2M/l urine, with analysis of creatinine addressed separately. Techniques used to measure creatinine are provided in Section 5.4. Note that Section 3.3.3 provides techniques for deriving the value of B2M as function of CRTU, and the confidence limits for independent measurements of B2M and CRTU.

5.3.2 Analytical Techniques Used to Monitor B2MU

One of the earliest tests used to measure B2MU was the radial immunodiffusion technique. This technique is a simple and specific method for identification and quantitation of a number of proteins found in human serum and other body fluids when the protein is not readily differentiated by standard electrophoretic procedures. A quantitative relationship exists between the concentration of a protein deposited in a well that is cut into a thin agarose layer containing the corresponding monospecific antiserum, and the distance that the resultant complex diffuses. The wells are filled with an unknown serum and the standard (or control), and incubated in a moist environment at room temperature. After the optimal point of diffusion has been reached, the diameters of the resulting precipition rings are measured. The diameter of a ring is related to the concentration of the constituent substance. For B2MU determinations required in the medical monitoring program, this method requires a process that may be insufficient to concentrate the protein to levels that are required for detection.

Radioimmunoassay (RIA) techniques are used widely in immunologic assays to measure the concentration of antigen or antibody in body-fluid samples. RIA procedures are based on competitive-binding techniques. If antigen concentration is being measured, the principle underlying the procedure is that radioactive-labeled antigen competes with the sample's unlabeled antigen for binding sites on a known amount of immobile antibody. When these 3 components are present in the system, an equilibrium exists. This equilibrium is followed by a separation of the free and bound forms of the antigen. Either free or bound radioactive-labeled antigen can be assessed to determine the amount of antigen in the sample. The analysis is performed by measuring the level of radiation emitted either by the bound complex following removal of the solution containing the free antigen, or by the isolated solution containing the residual-free antigen. The main advantage of the RIA method is the extreme sensitivity of detection for emitted radiation and the corresponding ability to detect trace amounts of antigen. Additionally, large numbers of tests can be performed rapidly.

The enzyme-linked immunosorbent assay (ELISA) techniques are similar to RIA techniques except that nonradioactive labels are employed. This technique is safe, specific and rapid, and is nearly as sensitive as RIA techniques. An enzyme-labeled antigen is used in the immunologic assay; the labeled antigen detects the presence and quantity of unlabeled antigen in the sample. In a representative ELISA test, a plastic plate is coated with antibody (e.g., antibody to B2M). The antibody reacts with antigen (B2M) in the urine and forms an antigen-antibody complex on the plate. A second anti-B2M antibody (i.e., labeled with an enzyme) is added to the mixture and forms an antibody-antigen-antibody complex. Enzyme activity is measured spectrophotometrically after the addition of a specific chromogenic substrate which is activated by the bound enzyme. The results of a typical test are calculated by comparing the spectrophotometric reading of a serum sample to that of a control or reference serum. In general, these procedures are faster and require less laboratory work than other methods.

In a fluorescent ELISA technique (such as the one employed in the Pharmacia Delphia test for B2M), the labeled enzyme is bound to a strong fluorescent dye. In the Pharmacia Delphia test, an antigen bound to a fluorescent dye competes with unlabeled antigen in the sample for a predetermined amount of specific, immobile antibody. Once equilibrium is reached, the immobile phase is removed from the labeled antigen in the sample solution and washed; an enhancement solution then is added that liberates the fluorescent dye from the bound antigen-antibody complex. The enhancement solution also contains a chelate that complexes with the fluorescent dye in solution; this complex increases the fluorescent properties of the dye so that it is easier to detect.

To determine the quantity of B2M in a sample using the Pharmacia Delphia test, the intensity of the fluorescence of the enhancement solution is measured. This intensity is proportional to the concentration of labeled antigen that bound to the immobile antibody phase during the initial competition with unlabeled antigen from the sample. Consequently, the intensity of the fluorescence is an inverse function of the concentration of antigen (B2M) in the original sample. The relationship between the fluorescence level and the B2M concentration in the sample is determined using a series of graded standards, and extrapolating these standards to find the concentration of the unknown sample.

5.3.3 Methods Developed for B2MU Determinations

B2MU usually is measured by radioimmunoassay (RIA) or enzyme-linked immunosorbent assay (ELISA); however, other methods (including gel electrophoresis, radial immunodiffusion, and nephelometric assays) also have been described (Schardun and van Epps 1987). RIA and ELISA methods are preferred because they are sensitive at concentrations as low as micrograms per liter, require no concentration processes, are highly reliable and use only a small sample volume.

Based on a survey of the literature, the ELISA technique is recommended for monitoring B2MU. While RIAs provide greater sensitivity (typically about 1 µg/l, Evrin et al. 1971), they depend on the use of radioisotopes; use of radioisotopes requires adherence to rules and regulations established by the Atomic Energy Commission, and necessitates an expensive radioactivity counter for testing. Radioisotopes also have a relatively short half-life, which corresponds to a reduced shelf life, thereby increasing the cost and complexity of testing. In contrast, ELISA testing can be performed on routine laboratory spectrophotometers, do not necessitate adherence to additional rules and regulations governing the handling of radioactive substances, and the test kits have long shelf lives. Further, the range of sensitivity commonly achieved by the recommended ELISA test (i.e., the Pharmacia Delphia test) is approximately 100 µg/l (Pharmacia 1990), which is sufficient for monitoring B2MU levels resulting from cadmium exposure. Based on the studies listed in Table 9 (Section 5.3.7), the average range of B2M concentrations among the general, nonexposed population falls between 60 and 300 µg/g CRTU. The upper 95th percentile of distributions, derived from studies in Table 9 which reported standard deviations, range between 180 and 1,140 µg/g CRTU. Also, the Pharmacia Delphia test currently is the most widely used test for assessing B2MU.

5.3.4 Sample Collection and Handling

As with CDB or CDU, sample collection procedures are addressed primarily to identify ways to minimize the degree of variability introduced by sample collection during medical monitoring. It is unclear the extent to which sample collection contributes to B2MU variability. Sources of variation include time-of-day effects, the interval since consuming liquids and the quantity of liquids consumed, and the introduction of external contamination during the collection process. A special problem unique to B2M sampling is the sensitivity of this protein to degradation under acid conditions commonly found in the bladder. To minimize this problem, strict adherence to a sampling protocol is recommended. The protocol should include provisions for normalizing the conditions under which the urine is collected. Clearly, it is important to minimize the interval urine spends in the bladder. It also is recommended that every effort be made to collect samples during the same time of day.

Collection of urine samples for biological monitoring usually is performed using "spot" (i.e., single-void) urine. Logistics and sample integrity become problems when efforts are made to collect urine over extended periods (e.g., 24 hrs). Unless single-void urines are used, numerous opportunities exist for measurement error because of poor control over sample collection, storage and environmental contamination.

To minimize the interval that sample urine resides in the bladder, the following adaption to the "spot" collection procedure is recommended: The bladder should be emptied and then a large glass of water should be consumed; the sample then should be collected within an hour after the water is consumed.

5.3.5 Best Achievable Performance

The best achievable performance is assumed to be equivalent to the performance reported by the manufacturers of the Pharmacia Delphia test kits (Pharmacia 1990). According to the insert that comes with these kits, QC results should be within ±2 SDs of the mean for each control sample tested; a CV of less than or equal to 5.2% should be maintained. The total CV reported for test kits is less than or equal to 7.2%.

5.3.6 General Method Performance

Unlike analyses for CDB and CDU, the Pharmacia Delphia test is standardized in a

commercial kit that controls for many sources of variation. In the absence of data to the contrary, it is assumed that the achievable performance reported by the manufacturer of this test kit will serve as an achievable performance objective. The CTQ proficiency testing program for B2MU analysis is expected to use the performance parameters defined by the test kit manufacturer as the basis of the B2MU proficiency testing program.

Note that results reported for the test kit are expressed in terms of µg B2M/l of urine, and have not been adjusted for creatinine. The indicated performance, therefore, is a measure of the performance of the B2M portion of the analyses only, and does not include variation that may have been introduced during the analysis of creatinine.

5.3.7 Observed B2MU Concentrations

As indicated in Section 4.3, the concentration of B2MU may serve as an early indicator of the onset of kidney damage associated with cadmium exposure.

5.3.7.1 *Range of B2MU Concentrations Among Unexposed Samples*

Most of the studies listed in Table 9 report B2MU levels for those who were not occupationally exposed to cadmium. Studies noted in the second column of this table (which contain the footnote "d") reported B2MU concentrations among cadmium-exposed workers who, nonetheless, showed no signs of proteinuria. These latter studies are included in this table because, as indicated in Section 4.3, monitoring B2MU is intended to provide advanced warning of the onset of kidney dysfunction associated with cadmium exposure, rather than to distinguish relative exposure. This table, therefore, indicates the range of B2MU levels observed among those who had no symptoms of renal dysfunction (including cadmium-exposed workers with none of these symptoms).

TABLE 9—B–2–MICROGLOBULIN CONCENTRATIONS OBSERVED IN URINE AMONG THOSE NOT OCCUPATIONALLY EXPOSED TO CADMIUM

Study No.	No. in study	Geometric mean	Geometric standard deviation	Lower 95th percentile of distribution [a]	Upper 95th percentile of distribution [a]	Reference
1	133 m [b]	115 µg/g [c]	4.03	12	1,140 µg/g [c]	Ishizaki et al. 1989.
2	161 f [b]	146 µg/g [c]	3.11	23	940 µg/g [c]	Ishizaki et al. 1989.
3	10	84 µg/g				Ellis et al. 1983.
4	203	76 µg/l				Stewart and Hughes 1981.
5	9	103 µg/g				Chia et al. 1989.
6	47 [d]	86 µg/L	1.9	30 µg/l	250 µg/L	Kjellstrom et al. 1977.
7	1,000 [e]	68.1 µg/gr Cr [f]	3.1 m & f	<10 µg/gr Cr [h]	320 µg/gr Cr [h]	Kowal 1983.
8	87	71 µg/g [i]		7 [h]	200 [h]	Buchet et al. 1980.
9	10	0.073 mg/24h				Evrin et al. 1971.
10	59	156 µg/g	1.1 [j]	130	180	Mason et al. 1988.
11	8	118 µg/g				Iwao et al. 1980.
12	34	79 µg/g				Wibowo et al. 1982.
13	41 m				400 µg/gr Cr [k]	Falck et al. 1983.
14	35 [n]	67				Roels et al. 1991.
15	31 [d]	63				Roels et al. 1991.
16	36 [d]	77 [i]				Miksche et al. 1981.
17	18 [n]	130				Kawada et al. 1989.
18	32 [p]	122				Kawada et al. 1989.
19	18 [d]	295	1.4	170	510	Thun et al. 1989.

a—Based on an assumed lognormal distribution
b—m = males, f = females
c—Aged general population from non-polluted area; 47.9% population aged 50–69; 52.1% ≥ 70 years of age; values reported in study
d—Exposed workers without proteinuria
e—492 females, 484 males
f—Creatinine-adjusted; males = 68.1 µg/g Cr, females = 64.3 µg/g Cr
h—Reported in the study
i—Arithmetic mean
j—Geometric standard error
k—Upper 95% tolerance limits: for Falck this is based on the 24 hour urine sample
n—Controls
p—Exposed synthetic resin and pigment workers without proteinuria; Cadmium in urine levels up to 10 µg/g Cr

To the extent possible, the studies listed in Table 9 provide geometric means and geometric standard deviations for measurements among the groups defined in each study. For studies reporting a geometric standard deviation along with a mean, the lower and upper 95th percentile for these distributions were derived and reported in the table.

The data provided from 15 of the 19 studies listed in Table 9 indicate that the geometric mean concentration of B2M observed among those who were not occupationally exposed to cadmium is 70–170 µg/g CRTU. Data from the 4 remaining studies indicate that exposed workers who exhibit no signs of proteinuria show mean B2MU levels of 60–300 µg/g CRTU. B2MU values in the study by Thun et al. (1989), however, appear high in comparison to the other 3 studies. If this study is removed, B2MU levels for those who are not occupationally exposed to cadmium are similar to B2MU levels found among cadmium-exposed workers who exhibit no signs of kidney dysfunction. Although the mean is high in the study by Thun et al., the range of measurements reported in this study is within the ranges reported for the other studies.

Determining a reasonable upper limit from the range of B2M concentrations observed among those who do not exhibit signs of proteinuria is problematic. Elevated B2MU levels are among the signs used to define the onset of kidney dysfunction. Without access to the raw data from the studies listed in Table 9, it is necessary to rely on reported standard deviations to estimate an upper limit for normal B2MU concentrations (i.e., the upper 95th percentile for the distributions measured). For the 8 studies reporting a geometric standard deviation, the upper 95th percentiles for the distributions are 180–1140 µg/g CRTU. These values are in general agreement with the upper 95th percentile for the distribution (i.e., 631 µg/g CRTU) reported by Buchet et al. (1980). These upper limits also appear to be in general agreement with B2MU values (i.e., 100–690 µg/g CRTU) reported as the normal upper limit by Iwao et al. (1980), Kawada et al. (1989), Wibowo et al. (1982), and Schardun and van Epps (1987). These values must be compared to levels reported among those exhibiting kidney dysfunction to define

a threshold level for kidney dysfunction related to cadmium exposure.

5.3.7.2 *Range of B2MU Concentrations Among Exposed Workers*

Table 10 presents results from studies reporting B2MU determinations among those occupationally exposed to cadmium in the work place; in some of these studies, kidney dysfunction was observed among exposed workers, while other studies did not make an effort to distinguish among exposed workers based on kidney dysfunction. As with Table 9, this table provides geometric means and geometric standard deviations for the groups defined in each study if available. For studies reporting a geometric standard deviation along with a mean, the lower and upper 95th percentiles for the distributions are derived and reported in the table.

TABLE 10.—β_2-MICROGLOBULIN CONCENTRATIONS OBSERVED IN URINE AMONG OCCUPATIONALLY-EXPOSED WORKERS

Study number	N	Concentration of β_2-microglobulin in urine				Reference
		Geometric mean (µg/g) [a]	Geom. Std. Dev.	L 95% of range [b]	U 95% of range [b]	
1	1,424	160	6.19	8.1	3,300	Ishizaki et al. 1989.
2	1,754	260	6.50	12	5,600	Ishizaki et al. 1989.
3	33	210	.....	.....	.....	Ellis et al. 1983.
4	65	210	.....	.....	.....	Chia et al. 1989.
5	[c] 44	5,700	6.49	[d] 300	[d] 98,000	Kjellstrom et al. 1977.
6	148	[e] 180	.....	[f] 110	[f] 280	Buchet et al. 1980.
7	37	160	3.90	17	1,500	Kenzaburo et al. 1979.
8	[c] 45	3,300	8.70	[d] 310	[d] 89,000	Mason et al. 1988.
9	[c] 10	6,100	5.99	[f] 650	[f] 57,000	Falck et al. 1983.
10	[c] 11	3,900	2.96	[d] 710	[d] 15,000	Elinder et al. 1985.
11	[c] 12	300	.....	.....	.....	Roels et al. 1991.
12	[g] 8	7,400	.....	.....	.....	Roels et al. 1991.
13	[c] 23	[h] 1,800	.....	.....	.....	Roels et al. 1989.
14	10	690	.....	.....	.....	Iwao et al. 1980.
15	34	71	.....	.....	.....	Wibowo et al. 1982.
16	[c] 15	4,700	6.49	[d] 590	[d] 93,000	Thun et al. 1989.

[a] Unless otherwise stated.
[b] Based on an assumed lognormal distribution.
[c] Among workers diagnosed as having renal dysfunction; for Elinder this means β_2 levels greater than 300 micrograms per gram creatinine (µg/gr Cr); for Roels, 1991, range=31–35, 170 µgβ_2/gr Cr and geometric mean=63 among healthy workers; for Mason β_2>300 µg/gr Cr.
[d] Based on a detailed review of the data by OSHA.
[e] Arithmetic mean.
[f] Reported in the study.
[g] Retired workers.
[h] 1,800 µgβ_2/gr Cr for first survey; second survey=1,600; third survey=2,600; fourth survey=2,600; fifth survey=2,600.

The data provided in Table 10 indicate that the mean B2MU concentration observed among workers experiencing occupational exposure to cadmium (but with undefined levels of proteinuria) is 160–7400 µg/g CRTU. One of these studies reports geometric means lower than this range (i.e., as low as 71 µg/g CRTU); an explanation for this wide spread in average concentrations is not available.

Seven of the studies listed in Table 10 report a range of B2MU levels among those diagnosed as having renal dysfunction. As indicated in this table, renal dysfunction (proteinuria) is defined in several of these studies by B2MU levels in excess of 300 µg/g CRTU (see footnote "c" of Table 10); therefore, the range of B2MU levels observed in these studies is a function of the operational definition used to identify those with renal dysfunction. Nevertheless, a B2MU level of 300 µg/g CRTU appears to be a meaningful threshold for identifying those having early signs of kidney damage. While levels much higher than 300 µg/g CRTU have been observed among those with renal dysfunction, the vast majority of those not occupationally exposed to cadmium exhibit much lower B2MU concentrations (see Table 9). Similarly, the vast majority of workers not exhibiting renal dysfunction are found to have levels below 300 µg/g CRTU (Table 9).

The 300 µg/g CRTU level for B2MU proposed in the above paragraph has support among researchers as the threshold level that distinguishes between cadmium-exposed workers with and without kidney dysfunction. For example, in the guide for physicians who must evaluate cadmium-exposed workers written for the Cadmium Council by Dr. Lauwerys, levels of B2M greater than 200–300 µg/g CRTU are considered to require additional medical evaluation for kidney dysfunction (exhibit 8–447, OSHA docket H057A). The most widely used test for measuring B2M (i.e., the Pharmacia Delphia test) defines B2MU levels above 300 µg/l as abnormal (exhibit L–140–1, OSHA docket H057A).

Dr. Elinder, chairman of the Department of Nephrology at the Karolinska Institute, testified at the hearings on the proposed cadmium rule. According to Dr. Elinder (exhibit L–140–45, OSHA docket H057A), the normal concentration of B2MU has been well documented (Evrin and Wibell 1972; Kjellstrom et al. 1977a; Elinder et al. 1978, 1983; Buchet et al. 1980; Jawaid et al. 1983; Kowal and Zirkes, 1983). Elinder stated that the upper 95 or 97.5 percentiles for B2MU among those without tubular dysfunction is below 300 µg/g CRTU (Kjellstrom et al. 1977a; Buchet et al. 1980; Kowal and Zirkes, 1983). Elinder defined levels of B2M above 300 µg/g CRTU as "slight" proteinuria.

5.3.8 *Conclusions and Recommendations for B2MU*

Based on the above evaluation, the following recommendations are made for a B2MU proficiency testing program. Note that the following discussion addresses only sampling and analysis for B2MU determinations (i.e., to be reported as an unadjusted µg B2M/l urine). Normalizing this result to creatinine requires a second analysis for CRTU (see section 5.4) so that the ratio of the 2 measurements can be obtained.

5.3.8.1 *Recommended Method*

The Pharmacia Delphia method (Pharmacia 1990) should be adopted as the standard method for B2MU determinations. Laboratories may adopt alternate methods, but it is the responsibility of the laboratory to demonstrate that alternate methods provide results of comparable quality to the Pharmacia Delphia method.

5.3.8.2 *Data Quality Objectives*

The following data quality objectives should facilitate interpretation of analytical results, and should be achievable based on the above evaluation.

Limit of Detection. A limit of 100 µg/l urine should be achievable, although the insert to the test kit (Pharmacia 1990) cites a detection limit of 150 µg/l; private conversations with representatives of Pharmacia, however, indicate that the lower limit of 100 µg/l

should be achievable provided an additional standard of 100 µg/l B2M is run with the other standards to derive the calibration curve (section 3.3.1.1). The lower detection limit is desirable due to the proximity of this detection limit to B2MU values defined for the cadmium medical monitoring program.

Accuracy. Because results from an interlaboratory proficiency testing program are not available currently, it is difficult to define an achievable level of accuracy. Given the general performance parameters defined by the insert to the test kits, however, an accuracy of ±15% of the target value appears achievable.

Due to the low levels of B2MU to be measured generally, it is anticipated that the analysis of creatinine will contribute relatively little to the overall variability observed among creatinine-normalized B2MU levels (see section 5.4). The initial level of accuracy for reporting B2MU levels under this program should be set at ±15%.

Precision. Based on precision data reported by Pharmacia (1990), a precision value (i.e., CV) of 5% should be achievable over the defined range of the analyte. For internal QC samples (i.e., recommended as part of an internal QA/QC program, section 3.3.1), laboratories should attain precision near 5% over the range of concentrations measured.

5.3.8.3 *Quality Assurance/Quality Control*

Commercial laboratories providing measurement of B2MU should adopt an internal QA/QC program that incorporates the following components: Strict adherence to the Pharmacia Delphia method, including calibration requirements; regular use of QC samples during routine runs; a protocol for corrective actions, and documentation of these actions; and, participation in an interlaboratory proficiency program. Procedures that may be used to address internal QC requirements are presented in Attachment 1. Due to differences between analyses for B2MU and CDB/CDU, specific values presented in Attachment 1 may have to be modified. Other components of the program (including characterization runs), however, can be adapted to a program for B2MU.

5.4 *Monitoring Creatinine in Urine (CRTU)*

Because CDU and B2MU should be reported relative to concentrations of CRTU, these concentrations should be determined in addition CDU and B2MU determinations.

5.4.1 *Units of CRTU Measurement*

CDU should be reported as µg Cd/g CRTU, while B2MU should be reported as µg B2M/g CRTU. To derive the ratio of cadmium or B2M to creatinine, CRTU should be reported in units of g crtn/l of urine. Depending on the analytical method, it may be necessary to convert results of creatinine determinations accordingly.

5.4.2 *Analytical Techniques Used To Monitor CRTU*

Of the techniques available for CRTU determinations, an absorbance spectrophotometric technique and a high-performance liquid chromatography (HPLC) technique are identified as acceptable in this protocol.

5.4.3 *Methods Developed for CRTU Determinations*

CRTU analysis performed in support of either CDU or B2MU determinations should be performed using either of the following 2 methods:

1. The Du Pont method (i.e., Jaffe method), in which creatinine in a sample reacts with picrate under alkaline conditions, and the resulting red chromophore is monitored (at 510 nm) for a fixed interval to determine the rate of the reaction; this reaction rate is proportional to the concentration of creatinine present in the sample (a copy of this method is provided in Attachment 2 of this protocol); or

2. The OSHA SLC Technical Center (OSLTC) method, in which creatinine in an aliquot of sample is separated using an HPLC column equipped with a UV detector; the resulting peak is quantified using an electrical integrator (a copy of this method is provided in Attachment 3 of this protocol).

5.4.4 *Sample Collection and Handling*

CRTU samples should be segregated from samples collected for CDU or B2MU analysis. Sample-collection techniques have been described under section 5.2.4. Samples should be preserved either to stabilize CDU (with HNO_3) or B2MU (with NaOH). Neither of these procedures should adversely affect CRTU analysis (see Attachment 3).

5.4.5 *General Method Performance*

Data from the OSLTC indicate that a CV of 5% should be achievable using the OSLTC method (Septon, L private communication). The achievable accuracy of this method has not been determined.

Results reported in surveys conducted by the CAP (CAP 1991a, 1991b and 1992) indicate that a CV of 5% is achievable. The accuracy achievable for CRTU determinations has not been reported.

Laboratories performing creatinine analysis under this protocol should be CAP accredited and should be active participants in the CAP surveys.

5.4.6 *Observed CRTU Concentrations*

Published data suggest the range of CRTU concentrations is 1.0–1.6 g in 24-hour urine samples (Harrison 1987). These values are equivalent to about 1 g/l urine.

5.4.7 *Conclusions and Recommendations for CRTU*

5.4.7.1 *Recommended Method*

Use either the Jaffe method (Attachment 2) or the OSLTC method (Attachment 3). Alternate methods may be acceptable provided adequate performance is demonstrated in the CAP program.

5.4.7.2 *Data Quality Objectives*

Limit of Detection. This value has not been formally defined; however, a value of 0.1 g/l urine should be readily achievable.

Accuracy. This value has not been defined formally; accuracy should be sufficient to retain accreditation from the CAP.

Precision. A CV of 5% should be achievable using the recommended methods.

6.0 *References*

Adamsson E, Piscator M, and Nogawa K. (1979). Pulmonary and gastrointestinal exposure to cadmium oxide dust in a battery factory. *Environmental Health Perspectives, 28,* 219–222.

American Conference of Governmental Industrial Hygienists (ACGIH). (1986). *Documentation of the Threshold Limit Values and Biological Exposure Indices.* 5th edition. p. BEI–55.

Bernard A, Buchet J, Roels H, Masson P, and Lauwerys R. (1979). Renal excretion of proteins and enzymes in workers exposed to cadmium. *European Journal of Clinical Investigation, 9,* 11–22.

Bernard A and Lauwerys R. (1990). Early markers of cadmium nephrotoxicity: Biological significance and predictive value. *Toxocological and Environmental Chemistry, 27,* 65–72.

Braunwald E, Isselbacher K, Petersdorf R, Wilson J, Martin J, and Fauci A (Eds.). (1987). *Harrison's Principles of Internal Medicine.* New York: McGraw-Hill Book Company.

Buchet J, Roels H, Bernard I, and Lauwerys R. (1980). Assessment of renal funcion of workers exposed to inorganic lead, cadmium, or mercury vapor. *Journal of Occupational Medicine, 22,* 741–750.

CAP. (1991). Urine Chemistry, Series 1: Survey (Set U–B). College of American Pathologists.

CAP. (1991). Urine Chemistry, Series 1: Survey (Set U–C). College of American Pathologists.

CAP. (1992). Urine Chemistry, Series 1: Survey (Set U–A). College of American Pathologists.

CDC. (1986). Centers for Disease Control, Division of Environmental Health Laboratory Sciences, Center for Environmental Health, Atlanta, Georgia. Docket No. 106A. Lake Couer d'Alene, Idaho cadmium and lead study: 86–0030, Specimen collection and shipping protocol.

CDC. (1990). Centers for Disease Control, Nutritional Biochemistry Branch. 4/27/90 Draft SOP for Method 0360A "Determination of cadmium in urine by graphite furnace atomic absorption spectrometry with Zeeman background correction."

Centre de Toxicologie du Quebec. (1991). Interlaboratory comparison program report for run #2. Shipping date 3/11/91. Addition BLR 9/19.

Chia K, Ong C, Ong H, and Endo G. (1989). Renal tubular function of workers exposed to low levels of cadmium. *British Journal of Industrial Medicine, 46,* 165–170.

Claeys-Thoreau F. (1982). Determination of low levels of cadmium and lead in biological fluids with simple dilution by atomic absorption spectrophotometry using Zeeman effect background absorption and the L'Vov platform. *Atomic Spectroscopy, 3,* 188–191.

DeBenzo Z, Fraile R, and Carrion N. (1990). Electrothermal atomization atomic absorption spectrometry with stabilized aqueous standards for the determination of cadmium in whole blood. *Analytica Chimica Acta, 231,* 283-288.

Elinder C, Edling C, Lindberg E, Kagedal B, and Vesterberg O. (1985). Assessment of renal function in workers previously exposed to cadmium. *British Journal of Internal Medicine, 42,* 754.

Ellis K, Cohn S, and Smith T. (1985). Cadmium inhalation exposure estimates:

Their significance with respect to kidney and liver cadmium burden. *Journal of Toxicology and Environmental Health, 15*, 173–187.

Ellis K, Yasumura S, Vartsky D, and Cohn S. (1983). Evaluation of biological indicators of body burden of cadmium in humans. *Fundamentals and Applied Toxicology, 3*, 169–174.

Ellis K, Yeun K, Yasumura S, and Cohn S. (1984). Dose-response analysis of cadmium in man: Body burden vs kidney function. *Environmental Research, 33*, 216–226.

Evrin P, Peterson A, Wide I, and Berggard I. (1971). Radioimmunoassay of B–2-microglobulin in human biological fluids. *Scandanavian Journal of Clinical Laboratory Investigation, 28*, 439–443.

Falck F, Fine L, Smith R, Garvey J, Schork A, England B, McClatchey K, and Linton J. (1983). Metallothionein and occupational exposure to cadmium. *British Journal of Industrial Medicine, 40*, 305–313.

Federal Register. (1990). Occupational exposure to cadmium: Proposed rule. 55/22/4052–4147, February 6.

Friberg, Exhibit 29, (1990). Exhibit No. 29 of the OSHA Federal Docket H057A. Washington, D.C.

Friberg L. (1988). Quality assurance. In T. Clarkson (Ed.), *Biological Monitoring of Toxic Metals* (pp. 103–105). New York: Plenum Press.

Friberg L. and Elinder C. (1988). Cadmium toxicity in humans. In *Essential and Trace Elements in Human Health and Disease* (pp. 559–587). Docket Number 8–660.

Friberg L., Elinder F., et al. (1986). *Cadmium and Health: A Toxicological and Epidemiological Appraisal. Volume II, Effects and Response.* Boca Raton, FL: CRC Press.

Friberg L., Piscator M., Nordberg G., and Kjellstrom T. (1974). *Cadmium in the Environment* (2nd ed.). Cleveland: CRC.

Friberg L., and Vahter M. (1983). Assessment of exposure to lead and cadmium through biological monitoring: Results of a UNEP/WHO global study. *Environmental Research, 30*, 95–128.

Gunter E., and Miller D. (1986). Laboratory procedures used by the division of environmental health laboratory sciences center for environmental health, Centers for Disease Control for the Hispanic health and nutrition examination survey (HHANES). Atlanta, GA: Centers for Disease Control.

Harrison. (1987). Harrison's Principles of Internal Medicine. Braunwald, E; Isselbacher, KJ; Petersdorf, RG; Wilson, JD; Martin, JB; and Fauci, AS Eds. Eleventh Ed. McGraw Hill Book Company. San Francisco.

Henry J. (1991). *Clinical Diagnosis and Management by Laboratory Methods* (18th edition). Philadelphia: WB Saunders Company.

IARC. (1987). *IRAC Monographs on the Evaluation of Carcinogenic Risks to Humans. Overall Evaluation of Carcinogenicity: Update of Volume 1–42.* Supplemental 7, 1987.

Ishizaki M., Kido T., Honda R., Tsuritani I., Yamada Y., Nakagawa H., and Nogawa K. (1989). Dose-response relationship between urinary cadmium and B–2–microglobulin in a Japanese environmentally cadmium exposed population. *Toxicology, 58*, 121–131.

Iwao S., Tsuchiya K., and Sakurai H. (1980). Serum and urinary B–2–microglobulin among cadmium-exposed workers. *Journal of Occupational Medicine, 22*, 399–402.

Iwata K., Katoh T., Morikawa Y., Aoshima K., Nishijo M., Teranishi H., and Kasuya M. (1988). Urinary trehalase activity as an indicator of kidney injury due to environmental cadmium exposure. *Archives of Toxicology, 62*, 435–439.

Kawada T., Koyama H., and Suzuki S. (1989). Cadmium, NAG activity, and B–2–microglobulin in the urine of cadmium pigment workers. *British Journal of Industrial Medicine, 46*, 52–55.

Kawada T., Tohyama C., and Suzuki S. (1990). Significance of the excretion of urinary indicator proteins for a low level of occupational exposure to cadmium. *International Archives of Occupational Environmental Health, 62*, 95–100.

Kjellstrom T. (1979). Exposure and accumulation of cadmium in populations from Japan, the United States, and Sweden. *Environmental Health Perspectives, 28*, 169–197.

Kjellstrom T., Evrin P., and Rahnster B. (1977). Dose-response analysis of cadmium-induced tubular proteinuria. *Environmental Research, 13*, 303–317.

Kjellstrom T., Shiroishi K., and Evrin P. (1977). Urinary B–2–microglobulin excretion among people exposed to cadmium in the general environment. *Environmental Research, 13*, 318–344.

Kneip T., & Crable J. (Eds.). (1988). Method 107. Cadmium in blood. *Methods for biological monitoring* (pp.161–164). Washington, DC: American Public Health Association.

Kowal N. (1988). Urinary cadmium and B–2–microglobulin: Correlation with nutrition and smoking history. *Journal of Toxicology and Environmental Health, 25*, 179–183.

Kowal N., Johnson D., Kraemer D., and Pahren H. (1979). Normal levels of cadmium in diet, urine, blood, and tissues of inhabitants of the United States. *Journal of Toxicology and Environmental Health, 5*, 995–1014.

Kowal N. and Zirkes M. (1983). Urinary cadmium and B–2–microglobulin: Normal values and concentration adjustment. *Journal of Toxicology and Environmental Health, 11*, 607–624.

Lauwerys R., Buchet J., and Roels H. (1976). The relationship between cadmium exposure or body burden and the concentration of cadmium in blood and urine in man. *International Archives of Occupational and Environmental Health, 36*, 275–285.

Lauwerys R, Roels H, Regniers, Buchet J, and Bernard A. (1979). Significance of cadmium concentration in blood and in urine in workers exposed to cadmium. *Environmental Research, 20*, 375–391.

Lind B, Elinder C, Friberg L, Nilsson B, Svartengren M, and Vahter M. (1987). Quality control in the analysis of lead and cadmium in blood. *Fresenius' Zeitschrift fur Analytical Chemistry, 326*, 647–655.

Mason H, Davison A, Wright A, Guthrie C, Fayers P, Venables K, Smith N, Chettle D, Franklin D, Scott M, Holden H, Gompertz D, and Newman-Taylor A. (1988). Relations between liver cadmium, cumulative exposure, and renal function in cadmium alloy workers. *British Journal of Industrial Medicine, 45*, 793–802.

Meridian Research, Inc. (1989). *Quantitative Assessment of Cancer Risks Associated with Occupational Exposure to Cd.* Prepared by Meridian Research, Inc. and Roth Associates, Inc. for the Occupational Safety & Health Administration. June 12, 1989.

Meridian Research, Inc and Roth Associates, Inc. (1989). *Quantitative Assessment of the Risk of Kidney Dysfunction Associated with Occupational Exposure to Cd.* Prepared by Meridian Research, Inc. and Roth Associates, Inc. for the Occupational Safety & Health Administration. July 31 1989.

Micheils E and DeBievre P. (1986). Method 25—Determination of cadmium in whole blood by isotope dilution mass spectrometry. O'Neill I, Schuller P, and Fishbein L (Eds.), *Environmental Carcinogens Selected Methods of Analysis* (Vol. 8). Lyon, France: International Agency for Research on Cancer.

Mueller P, Smith S, Steinberg K, and Thun M. (1989). Chronic renal tubular effects in relation to urine cadmium levels. *Nephron, 52*, 45–54.

NIOSH. (1984a). Elements in blood or tissues. Method 8005 issued 5/15/85 and Metals in urine. Method 8310 issued 2/15/84 In P. Eller (Ed.), *NIOSH Manual of Analytical Methods* (Vol. 1, Ed. 3). Cincinnati, Ohio: US–DHHS.

NIOSH. (1984b). Lowry L. Section F: Special considerations for biological samples in *NIOSH Manual of Analytical Methods* (Vol. 1, 3rd ed). P. Eller (Ed.). Cincinnati, Ohio: US–DHHS.

Nordberg G and Nordberg M. (1988). Biological monitoring of cadmium. In T. Clarkson, L. Friberg, G. Nordberg, and P. Sager (Eds.), *Biological Monitoring of Toxic Metals*, New York: Plenum Press.

Nogawa K. (1984). Biologic indicators of cadmium nephrotoxicity in persons with low-level cadmium exposure. *Environmental Health Perspectives, 54*, 163–169.

OSLTC (no date). Analysis of Creatinine for the Normalization of Cadmium and Beta-2-Microglobulin Concentrations in Urine. OSHA Salt Lake Technical Center. Salt Lake City, UT.

Paschal. (1990). Attachment 8 of exhibit 106 of the OSHA docket H057A.

Perkin-Elmer Corporation. (1982). *Analytical Methods for Atomic Absorption Spectroscopy.*

Perkin-Elmer Corporation. (1977). *Analytical Methods Using the HGA Graphite Furnace.*

Pharmacia Diagnostics. (1990). Pharmacia DELFIA system B-2-microglobulin kit insert. Uppsala, Sweden: Pharmacia Diagnostics.

Piscator M. (1962). Proteinuria in chronic cadmium poisoning. *Archives of Environmental Health, 5*, 55–62.

Potts, C.L. (1965). Cadmium Proteinuria—The Health Battery Workers Exposed to Cadmium Oxide dust. Ann Occup Hyg, 3:55–61, 1965.

Princi F. (1947). A study of industrial exposures to cadmium. *Journal of Industrial Hygiene and Toxicology, 29*, 315–320.

Pruszkowska E, Carnick G, and Slavin W. (1983). Direct determination of cadmium in urine with use of a stabillized temperature platform furnace and Zeeman background correction. *Clinical Chemistry, 29,* 477–480.

Roberts C and Clark J. (1986). Improved determination of cadmium in blood and plasma by flameless atomic absorption spectroscopy. *Bulletin of Environmental Contamination and Toxicology, 36,* 496–499.

Roelandts I. (1989). Biological reference materials. *Soectrochimica Acta, 44B,* 281–290.

Roels H, Buchet R, Lauwerys R, Bruaux P, Clays-Thoreau F, Laafontaine A, Overschelde J, and Verduyn J. (1978). Lead and cadmium absorption among children near a nonferrous metal plant. *Environmental Research, 15,* 290–308.

Roels H, Djubgang J, Buchet J, Bernard A, and Lauwerys R. (1982). Evolution of cadmium-induced renal dysfunction in workers removed from exposure. *Scandanavian Journal of Work and Environmental Health, 8,* 191–200.

Roels H, Lauwerys R, and Buchet J. (1989). Health significance of cadmium induced renal dysfunction: A five year follow-up. *British Journal of Industrial Medicine, 46,* 755–764.

Roels J, Lauwerys R, Buchet J, Bernard A, Chettle D, Harvey T, and Al–Haddad I. (1981). In vivo measurements of liver and kidney cadmium in workers exposed to this metal: Its significance with respect to cadmium in blood and urine. *Environmental Research, 26,* 217–240.

Roels H, Lauwerys R, Buchet J, Bernard A, Lijnen P, and Houte G. (1990). Urinary kallikrein activity in workers exposed to cadmium, lead, or mercury vapor. *British Journal of Industrial Medicine, 47,* 331–337

Sakurai H, Omae K, Toyama T, Higashi T, and Nakadate T. (1982). Cross-sectional study of pulmonary function in cadmium alloy workers. *Scandanavian Journal of Work and Environmental Health, 8,* 122–130.

Schardun G and van Epps L. (1987). B–2–microglobulin: Its significance in the evaluation of renal function. *Kidney International, 32,* 635–641.

Shaikh Z, and Smith L. (1984). Biological indicators of cadmium exposure and toxicity *Experentia, 40,* 36–43.

Smith J and Kench J. (1957). Observations on urinary cadmium and protein excretion in men exposed to cadmium oxide dust and fume. *British Journal of Industrial Medicine, 14,* 240–245.

Smith J, Kench J, and Lane R. (1955). Determination of Cadmium in urine and observations on urinary cadmium and protein excretion in men exposed to cadmium oxide dust. *British Journal of Industrial Medicine, 12,* 698–701.

SWRI (Southwest Research Institute). (1978). The distribution of cadmium and other metals in human tissues. Health Effects Research Lab, Research Triangle Park, NC, Population Studies Division. NTIS No. PB–285–200.

Stewart M and Hughes E. (1981). Urinary B–2–microglobulin in the biological monitoring of cadmium workers. *British Journal of Industrial Medicine, 38,* 170–174.

Stoeppler K and Brandt M. (1980). Contributions to automated trace analysis. Part V. Determination of cadmium in whole blood and urine by electrothermal atomic absorption spectrophotometry. *Fresenius' Zeitschrift fur Analytical Chemistry, 300,* 372–380.

Takenaka et al. (1983). *Carcinogencity of Cd Chloride Aerosols in White Rats.* INCI 70: 367–373, 1983.

Thun M, Osorio A, Schober S, Hannon W, Lewis B, and Halperin W. (1989). Nephropathy in cadmium workers: Assessment of risk from airborne occupational exposure to cadmium. *British Journal of Industrial Medicine, 46,* 689–697.

Thun M, Schnorr T, Smith A, Halperin W, and Lemen R. (1985). Mortality among a cohort of US cadmium production workers—an update. *Journal of the National Cancer Institute, 74,* 325–333.

Travis D and Haddock A. (1980). Interpretation of the observed age-dependency of cadmium body burdens in man. *Environmental Research, 22,* 46–60.

Tsuchiya K. (1967). Proteinuria of workers exposed to cadmium fume. *Archives of Environmental Health, 14,* 875–880.

Tsuchiya K. (1976). Proteinuria of cadmium workers. *Journal of Occupational Medicine, 18,* 463–470.

Tsuchiya K, Iwao S, Sugita M, Sakurai H. (1979). Increased urinary B-2-microglobulin in cadmium exposure: Dose-effect relationship and biological significance of B-2-microglobulin. *Environmental Health Perspectives, 28,* 147–153.

USEPA. (1985). Updated Mutagenicity and Carcinogenicity Assessments of Cd: Addendum to the Health Assessment Document for Cd (May 1981). Final Report. June 1985.

Vahter M and Friberg L. (1988). Quality control in integrated human exposure monitoring of lead and cadmium. *Fresenius' Zeitschrift fur Analytical Chemistry, 332,* 726–731.

Weber J. (1988). An interlaboratory comparison programme for several toxic substances in blood and urine. *The Science of the Total Environment, 71,* 111–123.

Weber J. (1991a). Accuracy and precision of trace metal determinations in biological fluids. In K. Subramanian, G. Iyengar, and K. Okamot (Eds.), *Biological Trace Element Research-Multidisciplinary Perspectives,* ACS Symposium Series 445. Washington, DC: American Chemical Society.

Weber J. (1991b). Personal communication about interlaboratory program and shipping biological media samples for cadmium analyses.

Wibowo A, Herber R, van Deyck W, and Zielhuis R. (1982). Biological assessment of exposure in factories with second degree usage of cadmium compounds. *International Archives of Occupational Environmental Health, 49,* 265–273.

Attachment 1—Nonmandatory Protocol for an Internal Quality Assurance/Quality Control Program

The following is an example of the type of internal quality assurance/quality control program that assures adequate control to satisfy OSHA requirements under this protocol. However, other approaches may also be acceptable.

As indicated in Section 3.3.1 of the protocol, the QA/QC program for CDB and CDU should address, at a minimum, the following:

- Calibration;
- Establishment of control limits;
- Internal QC analyses and maintaining control; and
- Corrective action protocols.

This illustrative program includes both initial characterization runs to establish the performance of the method and ongoing analysis of quality control samples intermixed with compliance samples to maintain control.

Calibration

Before any analytical runs are conducted, the analytic instrument must be calibrated. This is to be done at the beginning of each day on which quality control samples and/or compliance samples are run. Once calibration is established, quality control samples or compliance samples may be run. Regardless of the type of samples run, every fifth sample must be a standard to assure that the calibration is holding.

Calibration is defined as holding if every standard is within plus or minus (±) 15% of its theoretical value. If a standard is more than plus or minus 15% of its theoretical value, then the run is out of control due to calibration error and the entire set of samples must either be reanalyzed after recalibrating or results should be recalculated based on a statistical curve derived from the measurement of all standards.

It is essential that the highest standard run is higher than the highest sample run. To assure that this is the case, it may be necessary to run a high standard at the end of the run, which is selected based on the results obtained over the course of the run.

All standards should be kept fresh, and as they get old, they should be compared with new standards and replaced if they exceed the new standards by ± 15%.

Initial Characterization Runs and Establishing Control

A participating laboratory should establish four pools of quality control samples for each of the analytes for which determinations will be made. The concentrations of quality control samples within each pool are to be centered around each of the four target levels for the particular analyte identified in Section 4.4 of the protocol.

Within each pool, at least 4 quality control samples need to be established with varying concentrations ranging between plus or minus 50% of the target value of that pool. Thus for the medium-high cadmium in blood pool, the theoretical values of the quality control samples may range from 5 to 15 μg/l, (the target value is 10 μg/l). At least 4 unique theoretical values must be represented in this pool.

The range of theoretical values of plus or minus 50% of the target value of a pool means that there will be overlap of the pools. For example, the range of values for the medium-low pool for cadmium in blood is 3.5 to 10.5 μg/l while the range of values for the medium-high pool is 5 to 15 μg/l. Therefore, it is possible for a quality control

sample from the medium-low pool to have a higher concentration of cadmium than a quality control sample from the medium-high pool.

Quality control samples may be obtained as commercially available reference materials, internally prepared, or both. Internally prepared samples should be well characterized and traced or compared to a reference material for which a consensus value for concentration is available. Levels of analyte in the quality control samples must be concealed from the analyst prior to the reporting of analytical results. Potential sources of materials that may be used to construct quality control samples are listed in Section 3.3.1 of the protocol.

Before any compliance samples are analyzed, control limits must be established. Control limits should be calculated for every pool of each analyte for which determinations will be made and control charts should be kept for each pool of each analyte. A separate set of control charts and control limits should be established for each analytical instrument in a laboratory that will be used for analysis of compliance samples.

At the beginning of this QA/QC program, control limits should be based on the results of the analysis of 20 quality control samples from each pool of each analyte. For any given pool, the 20 quality control samples should be run on 20 different days. Although no more than one sample should be run from any single pool on a particular day, a laboratory may run quality control samples from different pools on the same day This constitutes a set of initial characterization runs.

For each quality control sample analyzed, the value F/T (defined in the glossary) should be calculated. To calculate the control limits for a pool of an analyte, it is first necessary to calculate the mean, $\bar{X}$, of the F/T values for each quality control sample in a pool and then to calculate its standard deviation, $\hat{\sigma}$. Thus, for the control limit for a pool, $\bar{X}$ is calculated as:

$$\frac{\left(\sum \frac{F}{T}\right)}{N}$$

and $\hat{\sigma}$ is calculated as

$$\left[\frac{\sum\left(\frac{F}{T}-\bar{X}\right)^2}{(N-1)}\right]^{\frac{1}{2}}$$

where N is the number of quality control samples run for a pool.

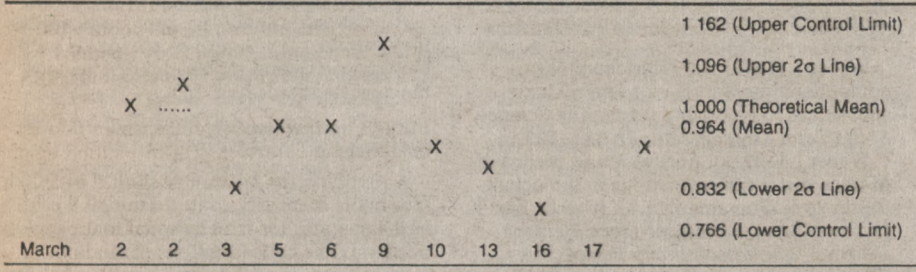
The control limit for a particular pool is then given by the mean plus or minus 2 standard deviations ($\bar{X} \pm 2\hat{\sigma}$). The control limits may be no greater than 40% of the mean F/T value. If three standard deviations are greater than 40% of the mean F/T value, then analysis of compliance samples may not begin.[1] Instead, an investigation into the causes of the large standard deviation should begin, and the inadequacies must be remedied. Then, control limits must be reestablished which will mean repeating the running 20 quality control samples from each pool over 20 days.

Once control limits have been established for each pool of an analyte, analysis of compliance samples may begin. During any run of compliance samples, quality control samples are to be interspersed at a rate of no less than 5% of the compliance sample workload. When quality control samples are run, however, they should be run in sets consisting of one quality control sample from each pool. Therefore, it may be necessary, at times, to intersperse quality control samples at a rate greater than 5%.

There should be at least one set of quality control samples run with any analysis of compliance samples. At a minimum, for example, 4 quality control samples should be run even if only 1 compliance sample is run. Generally, the number of quality control samples that should be run are a multiple of four with the minimum equal to the smallest multiple of four that is greater than 5% of the total number of samples to be run. For example, if 300 compliance samples of an analyte are run, then at least 16 quality control samples should be run (16 is the smallest multiple of four that is greater than 15, which is 5% of 300).

Control charts for each pool of an analyte (and for each instrument in the laboratory to be used for analysis of compliance samples) should be established by plotting F/T versus date as the quality control sample results are reported. On the graph there should be lines representing the control limits for the pool, the mean F/T limits for the pool, and the theoretical F/T of 1.000. Lines representing plus or minus (±) $2\hat{\sigma}$ should also be represented on the charts. A theoretical example of a control chart is presented in Figure 1

FIGURE 1.—THEORETICAL EXAMPLE OF A CONTROL CHART FOR A POOL OF AN ANALYTE



All quality control samples should be plotted on the chart, and the charts should be checked for visual trends. If a quality control sample falls above or below the control limits for its pool, then corrective steps must be taken (see the section on corrective actions below). Once a laboratory's program has been established, control limits should be updated every 2 months.

The updated control limits should be calculated from the results of the last 100 quality control samples run for each pool. If 100 quality control samples from a pool have not been run at the time of the update, then the limits should be based on as many as have been run provided at least 20 quality control samples from each pool have been run over 20 different days.

The trends that should be looked for on the control charts are:

1. 10 consecutive quality control samples falling above or below the mean;
2. 3 consecutive quality control samples falling more than $2\hat{\sigma}$ from the mean (above or below the $2\hat{\sigma}$ lines of the chart); or
3. the mean calculated to update the control limits falls more than 10% above or below the theoretical mean of 1.000.

If any of these trends is observed, then all analysis must be stopped, and an investigation into the causes of the errors must begin. Before the analysis of compliance samples may resume, the inadequacies must be remedied and the control limits must be reestablished for that pool of an analyte. Reestablishment of control limits will entail running 20 sets of quality control samples over 20 days.

Note that alternative procedures for defining internal quality control limits may also be acceptable. Limits may be based, for example, on proficiency testing, such as ± 1 µg or 15% of the mean (whichever is greater). These should be clearly defined.

Corrective Actions

Corrective action is the term used to describe the identification and remediation of errors occurring within an analysis. Corrective action is necessary whenever the result of the analysis of any quality control sample falls outside of the established control limits. The steps involved may include simple things like checking

[1] Note that the value, "40%" may change over time as experience is gained with the program.

calculations of basic instrument maintenance, or it may involve more complicated actions like major instrument repair. Whatever the source of error, it must be identified and corrected (and a Corrective Action Report (CAR) must be completed. CARs should be kept on file by the laboratory.

Attachment 2—Creatinine in Urine (JAFFE PROCEDURE)

* **Note**: Numbered superscripts refer to the bibliography.

Intended use: The CREA pack is used in the Du Pont ACA® discrete clinical analyzer to quantitatively measure creatinine in serum and urine.

Summary: The CREA method employs a modification of the kinetic Jaffe reaction reported by Larsen. This method has been reported to be less susceptible than conventional methods to interference from non-creatinine, Jaffe-positive compounds.[2]

A split sample comparison between the CREA method and a conventional Jaffe procedure on Autoanalyzer® showed a good correlation. (See SPECIFIC PERFORMANCE CHARACTERISTICS).

Autoanalyzer,® is a registered trademark of Technicon Corp., Tarrytown, NY.

Principles of Procedure: In the presence of a strong base such as NaOH, picrate reacts with creatinine to form a red chromophore. The rate of increasing absorbance at 510 nm due to the formation of this chromophore during a 17.07-second measurement period is directly proportional to the creatinine concentration in the sample.

$$\text{Creatinine} + \text{Picrate} \xrightarrow{\text{NaOH}} \text{Red chromophore (absorbs at 510 nm)}$$

Reagents:

Compartment[a]	Form	Ingredient	Quantity[b]
No. 2, 3, & 4.	Liquid	Picrate	0.11 mmol.
6	Liquid	NaOH (for pH adjustment)[c].	

[a] Compartments are numbered 1–7, with compartment #7 located closest to pack fill position #2.

[b] Nominal value at manufacture.
[c] See PRECAUTIONS.

Precautions: Compartment #6 contains 75µL of 10 N NaOH; avoid contact; skin irritant; rinse contacted area with water. Comply with OSHA'S Bloodborne Pathogens Standard while handling biological samples (29 CFR 1910.1039).

Used packs contain human body fluids; handle with appropriate care.

FOR IN VITRO DIAGNOSTIC USE

MIXING & DILUTING

Mixing and diluting are automatically performed by the ACA® discrete clinical analyzer. The sample cup must contain sufficient quantity to accommodate the sample volume plus the "dead volume"; precise cup filling is not required.

SAMPLE CUP VOLUMES (µL)

Analyzer	Standard		Microsystem	
	Dead	Total	Dead	Total
II, III	120	3000	10	500
IV, SX	120	3000	30	500
V	90	3000	10	500

Storage of Unprocessed Packs: Store at 2–8°C. Do not freeze. Do not expose to temperatures above 35°C or to direct sunlight.

Expiration: Refer to EXPIRATION DATE on the tray label.

Specimen Collection: Serum or urine can be collected and stored by normal procedures.[3]

Known Interfering Substances[4]

• Serum Protein Influence—Serum protein levels exert a direct influence on the CREA assay. The following should be taken into account when this method is used for urine samples and when it is calibrated:

Aqueous creatinine standards or urine specimens will give CREA results depressed by approximately 0.7 mg/dL [62 µmol/L] [5] and will be less precise than samples containing more than 3 g/dL [30 g/L] protein.

All urine specimens should be diluted with an albumin solution to give a final protein concentration of at least 3 g/dL [30 g/L]. Du Pont Enzyme Diluent (Cat. #790035–901) may be used for this purpose.

• High concentration of endrogenous bilirubin (>20 mg/dL [>342 µmol/L]) will give depressed CREA results (average depression 0.8 mg/dL [71 µmol/L]).[6]

• Grossly hemolyzed (hemoglobin >100 mg/dL [>62 µmol/L]) or visibly lipemic specimens may cause falsely elevated CREA results.[7,8]

• The following cephalosporin antibiotics do not interfere with the CREA method when present at the concentrations indicated. Systematic inaccuracies (bias) due to these substances are less than or equal to 0.1 mg/dL [8.84 µmol/L] at CREA concentrations of approximately 1 mg/dL [88 µmol/L].

Antibiotic	Peak serum level [a, b, c]		Drug concentration	
	mg/dL	[mmol/L]	mg/dL	[mmol/L]
Cephaloridine	1.4	0.3	25	6.0
Cephalexin	0.6–2.0	0.2–0.6	25	7.2
Cephamandole	1.3–2.5	0.3–0.5	25	4.9
Cephapirin	2.0	D0.4	25	5.6
Cephradine	1.5–2.0	0.4–0.6	25	7.1
Cefazolin	2.5–5.0	0.55–1.1	50	11.0

[a] Physicians' Desk Reference, Medical Economics Company, 33 Edition, 1979.

[2] Larsen, K, Clin Chem Acta 41, 209 (1972).

[3] Tietz, NW, Fundamentals of Clinical Chemistry, W. B. Saunders Co., Philadelphia, PA, 1976, pp 47–52, 1211.

[4] Supplementary information pertaining to the effects of various drugs and patient conditions on in vivo or in vitro diagnostic levels can be found in "Drug Interferences with Clinical Laboratory Tests," Clin. Chem 21 (5) (1975), and "Effects of Disease on Clinical Laboratory Tests," Clin Chem, 26 (4) 1D–476D (1980).

[5] Systeme International d'unites (S.I. Units) are in brackets.

[6] Watkins, R. Fieldkamp, SC, Thibert, RJ, and Zak, B, Clin Chem, 21, 1002 (1975).

[7] Kawas, EE, Richards, AH, and Bigger, R, An Evaluation of a Kinetic Creatinine Test for the Du Pont ACA, Du Pont Company, Wilmington, DE (February 1973). (Reprints available from DuPont Company, Diagnostic Systems)

[8] Westgard, JO, Effects of Hemolysis and Lipemia on ACA Creatinine Method, 0.200 µL, Sample Size, Du Pont Company, Wilmington, DE (October 1972).

[b] Henry, JB, Clinical Diagnosis and Management by Laboratory Methods, W.B. Saunders Co., Philadelphia, PA 1979, Vol. III.
[c] Krupp, MA, Tierney, LM Jr., Jawetz, E, Roe, RI, Camargo, CA, Physicians Handbook, Lange Medical Publications, Los Altos, CA, 1982 pp 635–636.

• The following cephalosporin antibiotics have been shown to affect CREA results when present at the indicated concentrations. System inaccuracies (bias) due to these substances are greater that 0.1 mg/dL [8.84 µmol/L] at CREA concentrations of:

Antibiotic	Peak serum level[a,b]		Drug concentration		
	mg/dL	[mmol/L]	mg/dL	[mmol/L]	Effect
Cephalothin	1–6	0.2–1.5	100	25.2	↓20–25%
Cephoxitin	2 0	0.5	5.0	1.2	↑35–40%

[a] Henry, JB, Clinical Diagnosis and Management by Laboratory Methods, W.B. Saunders Co., Philadelphia, PA 1979, Vol. III.
[b] Sarah, AJ, Koch, TR, Drusano, GL, Celoxitin Falsely Elevates Creatinine Levels, JAMA 247, 205–206 (1982).

• The single wavelength measurement used in this method eliminates interference from chromophores whose 510 nm absorbance is constant throughout the measurement period.

• Each laboratory should determine the acceptability of its own blood collection tubes and serum separation products. Variations in these products may exist between manufacturers and, at times, from lot to lot.

Procedure:

TEST MATERIALS

Item	II, III Du Pont Cat. No.	IV, SX Du Pont Cat. No.	V Du Pont Cat. No.
ACA® CREA Analytical Test Pack	701976901	701976901	701976901
Sample System Kit or	710642901	710642901	713697901
Micro Sample System Kit and	702694901	710356901	NA
Micro Sample System Holders	702785000	NA	NA
DYLUX® Photosensitive			
Printer Paper	700036000	NA	NA
Thermal Printer Paper	NA	710639901	713645901
Du Pont Purified Water	704209901	710615901	710815901
Cell Wash Solution	701864901	710664901	710864901

Test Steps

The operator need only load the sample kit and appropriate test pack(s) into a properly prepared ACA® discrete clinical analyzer. It automatically advances the pack(s) through the test steps and prints a result(s). See the Instrument Manual of the ACA® analyzer for details of mechanical travel of the test pack(s).

Preset Creatinine (CREA)—Test Conditions

- Sample Volume: 200 µL
- Diluent: Purified Water
- Temperature: 37.0 ± 0.1°C
- Reaction Period: 29 seconds
- Type of Measurement: Rate
- Measurement Period: 17.07 seconds
- Wavelength: 510 nm
- Units: mg/dL [µmol/L]

CALIBRATION

The general calibration procedure is described in the Calibration/Verification chapter of the Manuals.

The following information should be considered when calibrating the CREA method.

- Assay Range: 0–20 mg/mL [0–1768 µmol/L] [9].
- Reference Material: Protein containing primary standards [10] or secondary calibrators such as Du Pont Elevated Chemistry Control (Cat. #790035903) and Normal Chemistry Control (Cat.•#790035905)[11].
- Suggested Calibration Levels: 1,5,20, mg/mL [88, 442, 1768 µmol/L].
- Calibration Scheme: 3 levels, 3 packs per level.
- Frequency: Each new pack lot. Every 3 months for any one pack lot.

[9] For the results in S.I. units [µmol/L] the conversion factory is 88.4.

PRESET CREATININE (CREA) TEST CONDITIONS

Item	ACA® II analyzer	ACA® III, IV, SX, V analyzer
Count by	One (1) [Five (5)]	NA
Decimal point location.	0.0 mg/dL [000.0 µmol/L]	000.0 mg/dL [000 µmol/L]
Assigned starting point or offset C_o	999.8 [9823.]	−1.000 E1 [−8.840 E2]
Scale factor or assigned.	0.2000 mg/dL/count*	2.004 E-1*

[10] Refer to the Creatinine Standard Preparation and Calibration Procedure available on request from a Du Pont Representative.

[11] If the Du Pont Chemistry Controls are being used, prepare them according to the instructions on the product insert sheets.

PRESET CREATININE (CREA) TEST CONDITIONS—Continued

Item	ACA® II analyzer	ACA® III, IV, SX, V analyzer
Linear Term C_1*	[0.3536 µmol/L/count].	[1.772E1]

* The preset scale factor (linear term) was derived from the molar absorptivity of the indicator and is based on an absorbance to activity relationship (sensitivity) of 0.596 (mA/min)/(U/L). Due to small differences in filters and electronic components between instruments, the actual scale factor (linear term) may differ slightly from that given above.

Quality Control

Two types of quality control procedures are recommended:

• General Instrument Check. Refer to the Filter Balance Procedure and the Absorbance Test Method described in the ACA Analyzerinstrument Manual. Refer also to the ABS Test Methodology literature.

Creatinine Method Check. At least once daily run a CREA test on a solution of known creatinine activity such as an assayed control or calibration standard other than that used to calibrate the CREA method. For further details review the Quality Assurance Section of the Chemistry Manual. The result obtained should fall within acceptable limits defined by the day-to-day variability of the system as measured in the user's laboratory. (See SPECIFIC PERFORMANCE CHARACTERISTICS for guidance.) If the

result falls outside the laboratory's acceptable limits, follow the procedure outlined in the Chemistry Troubleshooting Section of the Chemistry Manual.

A possible system malfunction is indicated when analysis of a sample with five consecutive test packs gives the following results:

Level	SD
1 mg/dL	>0.15 mg/dL
[88 µmol/L]	[>13 µmol/L]
20 mg/dL	>0.68 mg/dL
[1768 µmol/L]	[>60 µmol/L]

Refer to the procedure outlined in the Trouble Shooting Section of the Manual.

Results

The ACA® analyzer automatically calculates and prints the CREA result in mg/dL [µmol/L].

Limitation of Procedure

Results >20 mg/dL [1768 µmol/L]:

• Dilute with suitable protein base diluent. Reassay. Correct for diluting before reporting.

The reporting system contains error messages to warn the operator of specific malfunctions. Any report slip containing a letter code or word immediately following the numerical value should not be reported. Refer to the Manual for the definition of error codes.

Reference Interval

SERUM: [a, b]	
Males	0.8–1.3 md/dL [71–115 µmol/L]
Females	0.6–1.0 md/dL [53–88 µmol/L]
URINE: [c]	
Males	0.6–2.5 g/24 hr [53–221 mmol/24 hr]
Females	0.6–1.5 g/24 hr [53–133 mmol/24 hr]

[a] Gadsden, RH, and Phelps, CA, A Normal Range Study of Amylase in Urine and Serum on the Du Pont ACA, Du Pont Company, Wilmington, DE (March 1978). (Reprints available from DuPont Company, Diagnostic Systems)

[b] Reference interval data obtained from 200 apparently healthy individuals (71 males, 129 females) between the ages of 19 and 72.

[c] Dicht, JJ, Reference Intervals for Serum Amylase and Urinary Creatinine on the Du Pont ACA® Discrete Clinical Analyzer, Du Pont Company, Wilmington, DE (November 1984).

Each laboratory should establish its own reference intervals for CREA as performed on the analyzer.

Specific Performance Characteristics [12]

REPRODUCIBILITY [a]

Material	Mean	Standard deviation (% CV)	
		Within-run	Between-day
Lyophilized	1.3	0.05 (3.7)	0.05 (3.7)
Control	[115]	[4.4]	[4.4]
Lyophilized	20.6	0.12 (0.6)	0.37 (1.8)
Control	[1821]	[10.6]	[32.7]

[a] Specimens at each level were analyzed in duplicate for twenty days. The within-run and between-day standard deviations were calculated by the analysis of variance method.

CORRELATION—REGRESSION STATISTICS [a]

Comparative method	Slope	Intercept	Correlation coefficient	n
Autoanalyzer®	1.03	0.03[2.7]	0.997	260

[a] Model equation for regression statistics is:

Result of ACA® Analyzer = Slope (Comparative method result) + intercept

Assay Range *

0.0–20.0 mg/dl
[0–1768 µmol]

* See REPRODUCIBILITY for method performance within the assay range.

Analytical Specificity

See KNOWN INTERFERING SUBSTANCES section for details.

Bibliography

Larsen, K, Clin Chem Acta 41, 209 (1972).

Tietz, NW, Fundamentals of Clinical Chemistry, W. B. Saunders Co., Philadelphia, PA, 1976, pp 47–52, 1211.

Supplementary information pertaining to the effects of various drugs and patient conditions on in vivo or in vitro diagnostic levels can be found in "Drug Interferences with Clinical Laboratory Tests," Clin. Chem 21 (5) (1975), and "Effects of Disease on Clinical Laboratory Tests," Clin Chem, 26 (4) 1D–476D (1980).

Watkins, R. Fieldkamp, SC, Thibert, RJ, and Zak, B, Clin Chem, 21, 1002 (1975).

Kawas, EE, Richards, AH, and Bigger, R, An Evaluation of a Kinetic Creatinine Test for the Du Pont ACA, Du Pont Company, Wilmington, DE (February 1973). (Reprints available from DuPont Company, Diagnostic Systems)

Westgard, JO, Effects of Hemolysis and Lipemia on ACA Creatinine Method, 0.200 µL, Sample Size, Du Pont Company, Wilmington, DE (October 1972).

Physicians' Desk Reference, Medical Economics Company, 33 Edition, 1979.

Henry, JB, Clinical Diagnosis and Management by Laboratory Methods, W.B. Saunders Co., Philadelphia, PA 1979, Vol. III.

Krupp, MA, Tierney, LM Jr., Jawetz, E, Roe, RI, Camargo, CA, Physicians Handbook, Lange Medical Publications, Los Altos, CA, 1982 pp 635–636.

Sarah, AJ, Koch, TR, Drusano, GL, Celoxitin Falsely Elevates Creatinine Levels, JAMA 247, 205–206 (1982).

Gadsden, RH, and Phelps, CA, A Normal Range Study of Amylase in Urine and Serum on the Du Pont ACA, Du Pont Company, Wilmington, DE (March 1978). (Reprints available from DuPont Company, Diagnostic Systems)

Dicht, JJ, Reference Intervals for Serum Amylase and Urinary Creatinine on the Du Pont ACA® Discrete Clinical Analyzer, Du Pont Company, Wilmington, DE (November 1984).

[12] All specific performance characteristics tests were run after normal recommended equipment quality control checks were performed (see Instrument Manual).

Attachment 3—Analysis of Creatinine for the Normalization of Cadmium and Beta–2–Microglobulin Concentrations in Urine (OSLTC Procedure)

Matrix: Urine

Target Concentration: 1.1 g/L (this amount is representative of creatinine concentrations found in urine).

Procedure: A 1.0 mL aliquot of urine is passed through a C18 SEP-PAK® (Waters Associates). Approximately 30 mL of HPLC (high performance liquid chromatography) grade water is then run through the SEP-PAK. The resulting solution is diluted to volume in a 100-mL volumetric flask and analyzed by HPLC using an ultraviolet (UV) detector.

Special Requirements: After collection, samples should be appropriately stabilized for cadmium (Cd) analysis by using 10% high purity (with low Cd background levels) nitric acid (exactly 1.0 mL of 10% nitric acid per 10 mL of urine) or stabilized for *Beta-2-Microglobulin* (B2M) by taking to pH 7 with dilute NaOH (exactly 1.0 mL of 0.11 N NaOH per 10 mL of urine). If not immediately analyzed, the samples should be frozen and shipped by overnight mail in an insulated container

Date: January 1992.

Chemists: David B. Armitage,

Duane Lee,

Organic Service Branch II, OSHA Technical Center, Salt Lake City, Utah.

1. General Discussion

1.1. Background

1.1.1. History of procedure

Creatinine has been analyzed by several methods in the past. The earliest methods were of the wet chemical type. As an example, creatinine reacts with sodium picrate in basic solution to form a red complex, which is then analyzed colorimetrically (Refs. 5.1. and 5.2.).

Since industrial hygiene laboratories will be analyzing for Cd and B2M in urine, they will be normalizing those concentrations to the concentration of creatinine in urine. A literature search revealed several HPLC methods (Refs. 5.3., 5.4., 5.5. and 5.6.) for creatinine in urine and because many industrial hygiene laboratories have HPLC equipment, it was desirable to develop an industrial hygiene HPLC method for creatinine in urine. The method of Hausen, Fuchs, and Wachter was chosen as the starting point for method development. SEP-PAKs were used for sample clarification and cleanup in this method to protect the analytical column. The urine aliquot which has been passed through the SEP-PAK is then analyzed by reverse-phase HPLC using ion-pair techniques.

This method is very similar to that of Ogata and Taguchi (Ref. 5.6.), except they used centrifugation for sample clean-up. It is also of note that they did a comparison of their HPLC results to those of the Jaffe method (a picric acid method commonly used in the health care industry) and found a linear relationship of close to 1:1. This indicates that either HPLC or colorimetric methods may be used to measure creatinine concentrations in urine.

1.1.2. Physical properties (Ref. 5.7.)

Molecular weight: 113.12

Molecular formula: C_4–H_7–N_3–O

Chemical name: 2–amino–1,5–dihydro–1–methyl–4H–imidazol–4–one

CAS#: 60–27–5

Melting point: 300 °C (decomposes)

Appearance: white powder

Solubility: soluble in water; slightly soluble in alcohol; practically insoluble in acetone, ether, and chloroform

Synonyms: 1–methylglycocyamidine, 1–methylhydantoin–2–imide

Structure: see Figure #1

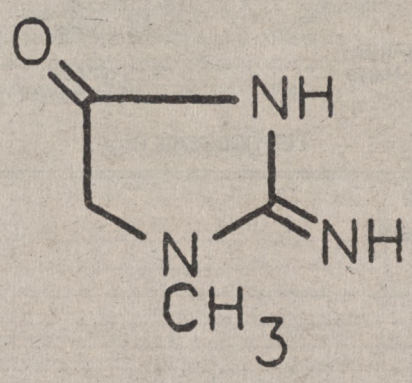


Figure #1

1.2 Advantages

1.2.1. This method offers a simple, straightforward, and specific alternative method to the Jaffe method.

1.2.2. HPLC instrumentation is commonly found in many industrial hygiene laboratories.

2. Sample Stabilization Procedure

2.1. Apparatus

Metal-free plastic container for urine sample.

2.2. Reagents

2.2.1. Stabilizing Solution—1) Nitric acid (10%, high purity with low Cd background levels) for stabilizing urine for Cd analysis or 2) NaOH, 0.11 N, for stabilizing urine for B2M analysis

2.2.2. HPLC grade water

2.3. Technique

2.3.1. Stabilizing solution is added to the urine sample (see section 2.2.1.). The stabilizing solution should be such that for each 10 mL of urine, add exactly 1.0 mL of stabilizer solution. (Never add water or urine to acid or base. Always add acid or base to water or urine.) Exactly 1.0 mL of 0.11 N NaOH added to 10 mL of urine should result in a pH of 7. Or add 1.0 mL of 10% nitric acid to 10 mL of urine.

2.3.2. After sample collection seal the plastic bottle securely and wrap it with an appropriate seal. Urine samples should be frozen and then shipped by overnight mail (if shipping is necessary) in an insulated container. (Do not fill plastic bottle too full. This will allow for expansion of contents during the freezing process.)

2.4. The Effect of Preparation and Stabilization Techniques on Creatinine Concentrations

Three urine samples were prepared by making one sample acidic, not treating a second sample, and adjusting a third sample to pH 7 The samples were analyzed in duplicate by two different procedures. For the first procedure a 1.0 mL aliquot of urine was put in a 100-mL volumetric flask, diluted to volume with HPLC grade water, and then analyzed directly on an HPLC. The other procedure used SEP-PAKs. The SEP-PAK was rinsed with approximately 5 mL of methanol followed by approximately 10 mL of HPLC grade water and both rinses were discarded. Then, 1.0 mL of the urine sample was put through the SEP-PAK, followed by 30 mL of HPLC grade water. The urine and water were transferred to a 100-mL volumetric flask, diluted to volume with HPLC grade water, and analyzed by HPLC. These three urine samples were analyzed on the day they were obtained and then frozen. The results show that whether the urine is acidic, untreated or adjusted to pH 7, the resulting answer for creatinine is essentially unchanged. The purpose of stabilizing the urine by making it acidic or neutral is for the analysis of Cd or B2M respectively.

COMPARISON OF PREPARATION AND STABILIZATION TECHNIQUES

Sample	w/o SEP-PAK (g/L creatinine)	with SEP- PAK (g/L creatinine)
Acid	1.10	1.10
Acid	1.11	1.10
Untreated ..	1.12	1.11
Untreated ..	1.11	1.12
pH7	1.08	1.02
pH7	1.11	1.08

2.5. Storage

After 4 days and 54 days of storage in a freezer, the samples were thawed, brought to room temperature and analyzed using the same procedures as in section 2.4. The results of several days of storage show that the resulting answer for creatinine is essentially unchanged.

STORAGE DATA

Sample	4 days		54 days	
	W/o SEP–PAK g/L creatinine	With SEP–PAK g/L creatinine	W/o SEP–PAK g/L creatinine	With SEP–PAK g/L creatinine
Acid	1.09	1.09	1.08	1.09
Acid	1.10	1.10	1.09	1.10
Acid	.....	.....	1.09	1.09
Untreated	1.13	1.14	1.09	1.11
Untreated	1.15	1.14	1.10	1.10
Untreated	.....	.....	1.09	1.10
pH 7	1.14	1.13	1.12	1.12
pH 7	1.14	1.13	1.12	1.12
pH 7	.....	.....	1.12	1.12

2.6. Interferences

None.

2.7. Safety precautions

2.7.1. Make sure samples are properly sealed and frozen before shipment to avoid leakage.

2.7.2. Follow the appropriate shipping procedures.

The following modified special safety precautions are based on those recommended by the Centers for Disease Control (CDC)(Ref. 5.8.) and OSHA's Bloodborne Pathogens standard (29 CFr 1910.1039).

2.7.3. Wear gloves, lab coat, and safety glasses while handling all human urine products. Disposable plastic, glass, and paper (pipet tips, gloves, etc.) that contact urine should be placed in a biohazard autoclave bag. These bags should be kept in appropriate containers until sealed and autoclaved. Wipe down all work surfaces with 10% sodium hypochlorite solution when work is finished.

2.7.4. Dispose of all biological samples and diluted specimens in a biohazard autoclave bag at the end of the analytical run.

2.7.5. Special care should be taken when handling and dispensing nitric acid. Always remember to add acid to water (or urine). Nitric acid is a corrosive chemical capable of severe eye and skin damage. Wear metal-free gloves, a lab coat, and safety glasses. If the nitric acid comes in contact with any part of the body, quickly wash with copious quantities of water for at least 15 minutes.

2.7.6. Special care should be taken when handling and dispensing NaOH. Always remember to add base to water (or urine). NaOH can cause severe eye and skin damage. Always wear the appropriate gloves, a lab coat, and safety glasses. If the NaOH comes in contact with any part of the body, quickly wash with copious quantities of water for at least 15 minutes.

3. Analytical Procedure

3.1. Apparatus

3.1.1. A high performance liquid chromatograph equipped with pump, sample injector and UV detector.

3.1.2. A C18 HPLC column; 25 cm × 4.6 mm I.D.

3.1.3. An electronic integrator, or some other suitable means of determining analyte response.

3.1.4. Stripchart recorder.

3.1.5. C18 SEP–PAKs (Waters Associates) or equivalent.

3.1.6. Luer-lock syringe for sample preparation (5 mL or 10 mL).

3.1.7. Volumetric pipettes and flasks for standard and sample preparation.

3.1.8. Vacuum system to aid sample preparation (optional).

3.2. Reagents

3.2.1. Water, HPLC grade.

3.2.2. Methanol, HPLC grade.

3.2.3. PIC B–7® (Waters Associates) in small vials.

3.2.4. Creatinine, anhydrous, Sigma Chemical Corp., purity not listed.

3.2.5. 1-Heptanesulfonic acid, sodium salt monohydrate.

3.2.6. Phosphoric acid.

3.2.7. Mobile phase. It can be prepared by mixing one vial of PIC B–7 into a 1 L solution of 50% methanol and 50% water. The mobile phase can also be made by preparing a solution that is 50% methanol and 50% water with 0.005M heptanesulfonic acid and adjusting the pH of the solution to 3.5 with phosphoric acid.

3.3. Standard preparation

3.3.1. Stock standards are prepared by weighing 10 to 15 mg of creatinine. This is transferred to a 25-mL volumetric flask and diluted to volume with HPLC grade water.

3.3.2. Dilutions to a working range of 3 to 35 µg/mL are made in either HPLC grade water or HPLC mobile phase (standards give the same detector response in either solution).

3.4. Sample preparation

3.4.1. The C18 SEP–PAK is connected to a Luer-lock syringe. It is rinsed with 5 mL HPLC grade methanol and then 10 mL of HPLC grade water. These rinses are discarded.

3.4.2. Exactly 1.0 mL of urine is pipetted into the syringe. The urine is put through the SEP–PAK into a suitable container using a vacuum system.

3.4.3. The walls of the syringe are rinsed in several stages with a total of approximately 30 mL of HPLC grade water. These rinses are put through the SEP–PAK into the same container. The resulting solution is transferred to a 100-mL volumetric flask and then brought to volume with HPLC grade water.

3.5. Analysis (conditions and hardware are those used in this evaluation.)

3.5.1. Instrument conditions

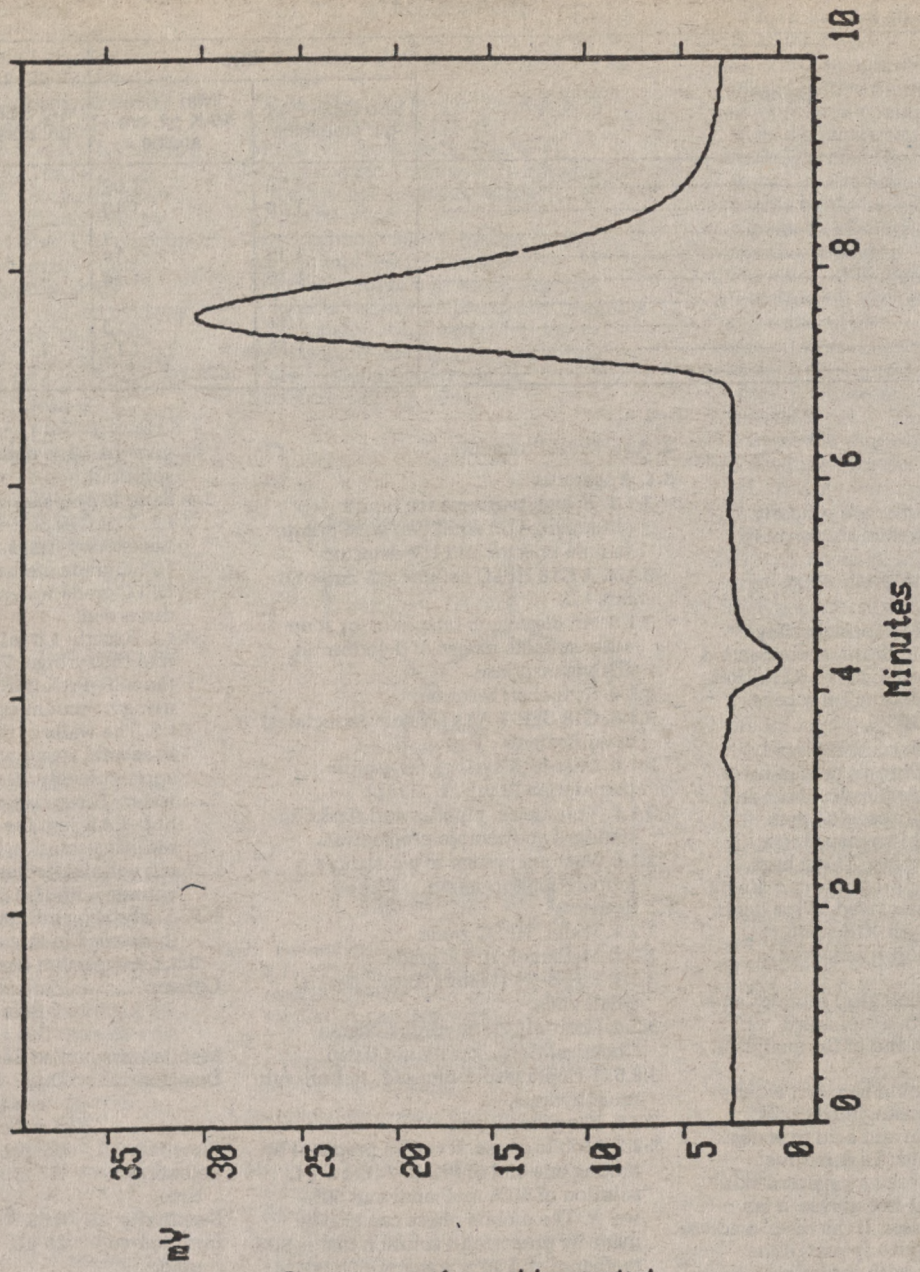
Column	Zorbax® ODS, 5–6 µm particle size; 25 cm × 4.6 mm I.D.
Mobile phase	See Section 3.2.7.
Detector	Dual wavelength UV; 229 nm (primary) 254 nm (secondary),
Flow rate	0.7 mL/minute.
Retention time.	7.2 minutes.
Sensitivity	0.05 AUFS.
Injection volume.	20 µL.

3.5.2. Chromatogram (See Figure #2).

3.6. Interferences

3.6.1. Any compound that has the same retention time as creatinine and absorbs at 229 nm is an interference.

3.6.2. HPLC conditions may be varied to circumvent interferences. In addition, analysis at another UV wavelength (i.e. 254 nm) would allow a comparison of the ratio of response of a standard to that of a sample. Any deviations would indicate an interference.



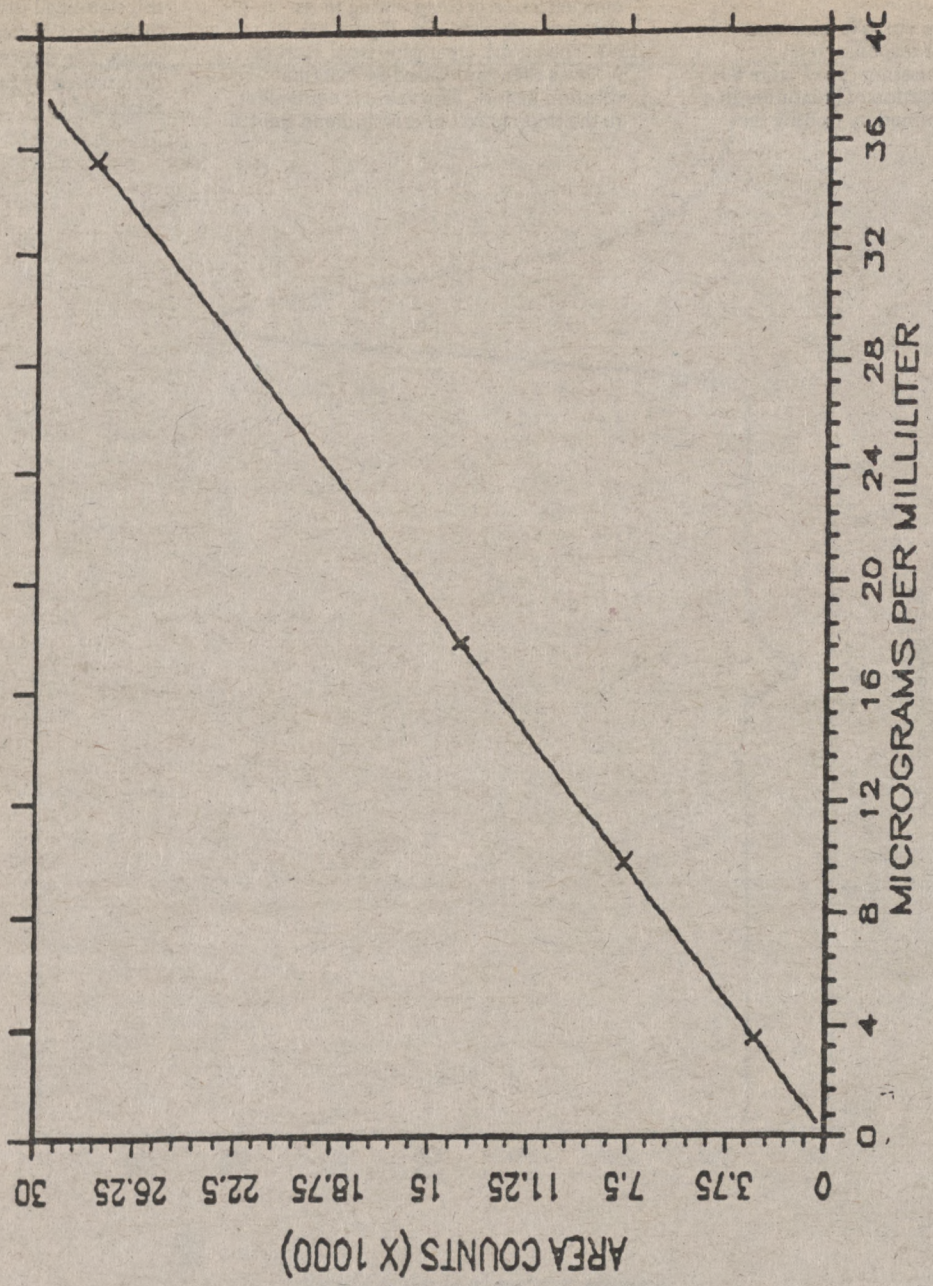
Chromatogram of a creatinine standard
Figure #2

3.7. Calculations

3.7.1. A calibration curve is constructed by plotting detector response versus standard concentration (See Figure #3).

3.7.2. The concentration of creatinine in a sample is determined by finding the concentration corresponding to its detector response. (See Figure #3).

3.7.3. The µg/mL creatinine from section 3.7.2. is then multiplied by 100 (the dilution factor). This value is equivalent to the micrograms of creatinine in the 1.0 mL stabilized urine aliquot or the milligrams of creatinine per liter of urine. The desired unit, g/L, is determined by the following relationship:



Calibration curve for creatinine
Figure #3

$$g/L = \frac{\mu g/mL}{1000} = \frac{mg/L}{1000}$$

3.7.4. The resulting value for creatinine is used to normalize the urinary concentration of the desired analyte (A) (Cd or B2M) by using the following formula.

$$\mu g\ A/g\ creatinine = \frac{\mu g\ A/L\ (experimental)}{g/L\ creatinine}$$

Where A is the desired analyte. The protocol of reporting such normalized results is µg A/g creatinine.

3.8. Safety precautions. See section 2.7.

4. Conclusions

The determination of creatinine in urine by HPLC is a good alternative to the Jaffe method for industrial hygiene laboratories. Sample clarification with SEP–PAKs did not change the amount of creatinine found in urine samples. However, it does protect the analytical column. The results of this creatinine in urine procedure are unaffected by the pH of the urine sample under the conditions tested by this procedure. Therefore, no special measures are required for creatinine analysis whether the urine sample has been stabilized with 10% nitric acid for the Cd analysis or brought to a pH of 7 with 0.11 NaOH for the B2M analysis.

5. References

5.1. Clark, L.C.; Thompson, H.L.; *Anal. Chem.* 1949, 21, 1218.

5.2. Peters, J.H.; *J. Biol. Chem.* 1942, 146, 176.

5.3. Hausen, V.A.; Fuchs, D.; Wachter, H.; *J. Clin. Chem. Clin. Biochem.* 1981, 19, 373–378.

5.4. Clark, P.M.S.; Kricka, L.J.; Patel, A.; *J. Liq. Chrom.* 1980, 3(7), 1031–1046.

5.5. Ballerini, R.; Chinol, M.; Cambi, A.; *J. Chrom.* 1979, 179, 365–369.

5.6. Ogata, M.; Taguchi, T.; *Industrial Health* 1987, 25, 225–228.

5.7. "Merck Index", 11th ed.; Windholz, Martha Ed.; Merck: Rahway, N.J., 1989; p. 403.

5.8. Kimberly, M.; "*Determination of Cadmium in Urine by Graphite Furnace Atomic Absorption Spectrometry with Zeeman Background Correction.*" Centers for Disease Control, Atlanta, Georgia, unpublished, update 1990.

PART 1926 — [Amended]

Subpart Z—Toxic and Hazardous Substances

1. The authority citation for subpart Z of 29 CFR part 1926 continues to read as follows:

Authority: Sections 6 and 8, Occupational Safety and Health Act, 29 U.S.C. 655, 657; Secretary of Labor's Orders Nos. 12–71 (36 FR 8754), 8–76 (41 FR 25059), 9–83 (48 FR 35736) or 1–90 (55 FR 9033) as applicable; and 29 CFR part 1911.

Section 1926.1102 not issued under 29 U.S.C. 655 or 29 CFR part 1911; also issued under 5 U.S.C. 653.

Section 1926.1103 through 1926.1118 also issued under 29 U.S.C. 653.

Section 1926.1128 also issued under 29 U.S.C. 653.

Section 1926.1145 and 1926.1147 also issued under 29 U.S.C. 653.

Section 1926.1148 also issued under 29 U.S.C. 653.

2. In part 1926, § 1926.63, *Cadmium*, is redesignated as § 1926.1127.

3. In paragraph (m)(4)(iii)(H) of (newly redesignated) § 1926.1127, the reference to "§ 1910.20(g)(1) and (2)" is changed to read "§ 1926.33(g) (1) and (2)"; in § 1926.1127(n) (1)(iii), (3)(iii), and (5)(i), the reference to "29 CFR 1910.20" is changed to read "§ 1926.33 of this part"; and in § 1926.1127(n)(6), the reference to "29 CFR 1910.20(h)" is changed to read "§ 1926.33(h) of this part."

[FR Doc. 93-31820 Filed 12-30-93; 8:45 am]

BILLING CODE 4510-26-F

federal register

Monday
January 3, 1994

Part IV

Reader Aids

Cumulative List of Public Laws
103d Congress, First Session

CUMULATIVE LIST OF PUBLIC LAWS

This is the cumulative list of public laws for the 103d Congress. The List of Public Laws will resume when bills are enacted into public law during the second session of the 103d Congress, which convenes on January 25, 1994. Any comments may be addressed to the Director, Office of the Federal Register, Washington, DC 20408.

Public Law	Title	Approved	107 Stat.
103–1	To authorize the United States Secret Service to continue to furnish protection to the former Vice President or his spouse.	Jan. 15, 1993	3
103–2	To ensure that the compensation and other emoluments attached to the office of Secretary of the Treasury are those which were in effect on January 1, 1989.	Jan. 19, 1993	4
103–3	Family and Medical Leave Act of 1993	Feb. 5, 1993	6
103–4	To designate the Federal Judiciary Building in Washington, D.C., as the "Thurgood Marshall Federal Judiciary Building".	Feb. 8, 1993	30
103–5	To designate February 21 through February 27, 1993, as "National FFA Organization Awareness Week".	Feb. 25, 1993	31
103–6	Emergency Unemployment Compensation Amendments of 1993	Mar. 4, 1993	33
103–7	Aircraft Equipment Settlement Leases Act of 1993	Mar. 17, 1993	36
103–8	Designating March 25, 1993, as "Greek Independence Day: A National Day of Celebration of Greek and American Democracy".	Mar. 20, 1993	37
103–9	To proclaim March 20, 1993, as "National Agriculture Day"	Mar. 20, 1993	38
103–10	To extend the Export Administration Act of 1979 and to authorize appropriations under that Act for fiscal years 1993 and 1994.	Mar. 27, 1993	40
103–11	To extend the suspended implementation of certain requirements of the food stamp program on Indian reservations, and for other purposes.	Apr. 1, 1993	41
103–12	To provide for a temporary increase in the public debt limit	Apr. 6, 1993	42
103–13	To amend the Airport and Airway Safety, Capacity, Noise Improvement, and Intermodal Transportation Act of 1992 with respect to the establishment of the National Commission to Ensure a Strong Competitive Airline Industry.	Apr. 7, 1993	43
103–14	Designating April 2, 1993, as "Education and Sharing Day, U.S.A."	Apr. 12, 1993	45
103–15	Concerning the dedication of the United States Holocaust Memorial Museum	Apr. 12, 1993	47
103–16	To authorize the adjustment of the boundaries of the South Dakota portion of the Sioux Ranger District of Custer National Forest, and for other purposes.	Apr. 12, 1993	49
103–17	Idaho Land Exchange Act of 1993	Apr. 12, 1993	50
103–18	To amend title 38, United States Code, and title XIX of the Social Security Act to make technical corrections relating to the Veterans Health Care Act of 1992.	Apr. 12, 1993	53
103–19	Providing for the appointment of Hanna Holborn Gray as a citizen regent of the Board of Regents of the Smithsonian Institution.	Apr. 12, 1993	55
103–20	Providing for the appointment of Barber B. Conable, Jr., as a citizen regent of the Board of Regents of the Smithsonian Institution.	Apr. 12, 1993	56
103–21	Providing for the appointment of Wesley S. Williams, Jr. as a citizen regent of the Board of Regents of the Smithsonian Institution.	Apr. 12, 1993	57
103–22	Designating March 1993 and March 1994 both as "Women's History Month"	Apr. 12, 1993	58
103–23	To amend the Stock Raising Homestead Act to resolve certain problems regarding subsurface estates, and for other purposes.	Apr. 16, 1993	60
103–24	Making emergency supplemental appropriations for the fiscal year ending September 30, 1993, and for other purposes.	Apr. 23, 1993	67
103–25	To revise the boundaries of the George Washington Birthplace National Monument, and for other purposes.	May 3, 1993	68
103–26	To provide for the rehabilitation of historic structures within the Sandy Hook Unit of Gateway National Recreation Area in the State of New Jersey, and for other purposes.	May 3, 1993	70
103–27	To designate the weeks of April 25 through May 2, 1993, and April 10 through 17, 1994, as "Jewish Heritage Week".	May 3, 1993	72
103–28	To authorize the President to proclaim the last Friday of April 1993 as "National Arbor Day"	May 6, 1993	74
103–29	To designate the week beginning April 25, 1993, as "National Crime Victims' Rights Week"	May 6, 1993	75
103–30	To designate the weeks beginning April 18, 1993, and April 17, 1994, each as "Nancy Moore Thurmond National Organ and Tissue Donor Awareness Week".	May 7, 1993	76
103–31	National Voter Registration Act of 1993	May 20, 1993	77
103–32	To authorize the construction of a memorial on Federal land in the District of Columbia or its environs to honor members of the Armed Forces who served in World War II and to commemorate United States participation in that conflict.	May 25, 1993	90
103–33	To authorize the conduct and development of NAEP assessments for fiscal year 1994	May 25, 1993	93
103–34	Designating May 30, 1993, through June 7, 1993, as a "Time for the National Observance of the Fiftieth Anniversary of World War II".	May 31, 1993	95
103–35	To amend title 10, United States Code, to revise the applicability of qualification requirements for certain acquisition workforce positions in the Department of Defense, to make necessary technical corrections in that title and certain other defense-related laws, and to facilitate real property repairs at military installations and minor military construction during fiscal year 1993.	May 31, 1993	97
103–36	Central Intelligence Agency Voluntary Separation Pay Act	June 8, 1993	104
103–37	To amend the Immigration and Nationality Act to authorize appropriations for refugee assistance for fiscal years 1993 and 1994.	June 8, 1993	107
103–38	Designating the weeks beginning May 23, 1993, and May 15, 1994, as "Emergency Medical Services Week".	June 8, 1993	108

Public Law	Title	Approved	107 Stat.
103–39	To designate the months of May 1993 and May 1994 as "National Trauma Awareness Month" ...	June 8, 1993	110
103–40	Government Printing Office Electronic Information Access Enhancement Act of 1993	June 8, 1993	112
103–41	Designating the week beginning June 6, 1993, and June 5, 1994, "Lyme Disease Awareness Week".	June 8, 1993	115
103–42	National Cooperative Production Amendments of 1993	June 10, 1993	117
103–43	National Institutes of Health Revitalization Act of 1993	June 10, 1993	122
103–44	To amend the Federal Deposit Insurance Act to improve the procedures for treating unclaimed insured deposits, and for other purposes.	June 28, 1993	220
103–45	Forest Resources Conservation and Shortage Relief Amendments Act of 1993	July 1, 1993	223
103–46	Big Thicket National Preserve Addition Act of 1993	July 1, 1993	229
103–47	To designate July 1, 1993, as "National NYSP Day"	July 1, 1993	232
103–48	To resolve the status of certain lands relinquished to the United States under the Act of June 4, 1897 (30 Stat. 11, 36), and for other purposes.	July 2, 1993	234
103–49	To provide authority for the President to enter into trade agreements to conclude the Uruguay Round of multilateral trade negotiations under the auspices of the General Agreement on Tariffs and Trade, to extend tariff proclamation authority to carry out such agreements, and to apply congressional "fast track" procedures to a bill implementing such agreements.	July 2, 1993	239
103–50	Supplemental Appropriations Act of 1993	July 2, 1993	241
103–51	To designate the facility of the United States Postal Service located at 20 South Main in Beaver, Utah, as the "Abe Murdock United States Post Office Building".	July 16, 1993	270
103–52	Designating July 2, 1993 and July 2, 1994 as "National Literacy Day"	July 16, 1993	271
103–53	Designating July 17 through July 23, 1993, as "National Veterans Golden Age Games Week"	July 22, 1993	273
103–54	To authorize the transfer of naval vessels to certain foreign countries	July 28, 1993	274
103–55	Armored Car Industry Reciprocity Act of 1993	July 28, 1993	276
103–56	Cave Creek Canyon Protection Act of 1993	Aug. 2, 1993	278
103–57	To provide for planning and design of a National Air and Space Museum extension at Washington Dulles International Airport.	Aug. 2, 1993	279
103–58	To modify the boundary of Hot Springs National Park	Aug. 2, 1993	280
103–59	To extend the operation of the migrant student record transfer system	Aug. 2, 1993	281
103–60	Designating April 9, 1994, as "National Former Prisoner of War Recognition Day"	Aug. 2, 1993	282
103–61	To designate August 1, 1993, as "Helsinki Human Rights Day"	Aug. 2, 1993	283
103–62	Government Performance and Results Act of 1993	Aug. 3, 1993	285
103–63	Spring Mountains National Recreation Area Act	Aug. 4, 1993	297
103–64	To establish the Snake River Birds of Prey National Conservation Area in the State of Idaho, and for other purposes.	Aug. 4, 1993	302
103–65	To extend the period during which chapter 12 of title 11 of the United States Code remains in effect, and for other purposes.	Aug. 6, 1993	311
103–66	Omnibus Budget Reconciliation Act of 1993	Aug. 10, 1993	312
103–67	To provide for the conveyance of certain lands and improvements in Washington, District of Columbia, to the Columbia Hospital for Women to provide a site for the construction of a facility to house the National Women's Health Resource Center.	Aug. 11, 1993	686
103–68	To amend the Securities Exchange Act of 1934 to permit members of national securities exchanges to effect certain transactions with respect to accounts for which such members exercise investment discretion.	Aug. 11, 1993	691
103–69	Legislative Branch Appropriations Act, 1994	Aug. 11, 1993	692
103–70	To authorize the Administrator of the Federal Aviation Administration to conduct appropriate programs and activities to acknowledge the status of the county of Fond du Lac, Wisconsin, as the "World Capital of Aerobatics", and for other purposes.	Aug. 11, 1993	714
103–71	To designate September 13, 1993, as "Commodore John Barry Day"	Aug. 11, 1993	715
103–72	Fluid Milk Promotion Amendments Act of 1993	Aug. 11, 1993	717
103–73	Rehabilitation Act Amendments of 1993	Aug. 11, 1993	718
103–74	Designating September 9, 1993, and April 21, 1994, each as "National D.A.R.E. Day"	Aug. 11, 1993	737
103–75	Emergency Supplemental Appropriations for Relief From the Major, Widespread Flooding in the Midwest Act of 1993.	Aug. 12, 1993	739
103–76	Depository Institutions Disaster Relief Act of 1993	Aug. 12, 1993	752
103–77	Colorado Wilderness Act of 1993	Aug. 13, 1993	756
103–78	To amend title 38, United States Code, to codify the rates of disability compensation for veterans with service-connected disabilities and the rates of dependency and indemnity compensation for survivors of such veterans as such rates took effect on December 1, 1992.	Aug. 13, 1993	767
103–79	To authorize major medical facility construction projects for the Department of Veterans Affairs for fiscal year 1994, and for other purposes.	Aug. 13, 1993	770
103–80	Nutrition Labeling and Education Act Amendments of 1993	Aug. 13, 1993	773
103–81	Small Business Guaranteed Credit Enhancement Act of 1993	Aug. 13, 1993	780
103–82	National and Community Service Trust Act of 1993	Sep. 21, 1993	785
103–83	To designate the weeks of September 19, 1993, through September 25, 1993, and of September 18, 1994, through September 24, 1994, as "National Rehabilitation Week".	Sep. 21, 1993	924
103–84	To designate October 1993 as "National Breast Cancer Awareness Month"	Sep. 21, 1993	926
103–85	Designating September 10, 1993, as "National POW/MIA Recognition Day" and authorizing the display of the National League of Families POW/MIA flag.	Sep. 21, 1993	928
103–86	To extend the current interim exemption under the Marine Mammal Protection Act for commercial fisheries until April 1, 1994.	Sep. 30, 1993	930

Public Law	Title	Approved	107 Stat.
103–87	Making appropriations for foreign operations, export financing, and related programs for the fiscal year ending September 30, 1994, and making supplemental appropriations for such programs for the fiscal year ending September 30, 1993, and for other purposes.	Sep. 30, 1993	931
103–88	Making continuing appropriations for the fiscal year 1994, and for other purposes	Sep. 30, 1993	977
103–89	Performance Management and Recognition System Termination Act	Sep. 30, 1993	981
103–90	To designate the Federal building to be constructed between Gay and Market Streets and Cumberland and Church Avenues in Knoxville, Tennessee, as the "Howard H. Baker, Jr. United States Courthouse".	Oct. 1, 1993	986
103–91	Gallatin Range Consolidation and Protection Act of 1993	Oct. 1, 1993	987
103–92	To designate the month of August as "National Scleroderma Awareness Month", and for other purposes.	Oct. 1, 1993	994
103–93	Utah Schools and Lands Improvement Act of 1993	Oct. 1, 1993	995
103–94	Hatch Act Reform Amendments of 1993	Oct. 6, 1993	1001
103–95	To designate the United States courthouse located at 10th and Main Streets in Richmond, Virginia, as the "Lewis F. Powell, Jr. United States Courthouse".	Oct. 6, 1993	1012
103–96	To designate the Federal building in Jacksonville, Florida, as the "Charles E. Bennett Federal Building".	Oct. 6, 1993	1013
103–97	To redesignate the Pulaski Post Office located at 111 West College Street in Pulaski, Tennessee, as the "Ross Bass Post Office".	Oct. 6, 1993	1014
103–98	To continue the authorization of appropriations for the East Court of the National Museum of Natural History, and for other purposes.	Oct. 6, 1993	1015
103–99	To designate the week of October 3, 1993, through October 9, 1993, as "Mental Illness Awareness Week".	Oct. 6, 1993	1016
103–100 ..	To designate October 6, 1993 and 1994, as "German-American Day"	Oct. 6, 1993	1018
103–101 ..	To authorize appropriations for the American Folklife Center for fiscal years 1994 and 1995	Oct. 8, 1993	1020
103–102 ..	To provide that certain property located in the State of Oklahoma owned by an Indian housing authority for the purpose of providing low-income housing shall be treated as Federal property under the Act of September 30, 1950 (Public Law 874, 81st Congress).	Oct. 8, 1993	1021
103–103 ..	Federal Employees Leave Sharing Amendments Act of 1993	Oct. 8, 1993	1022
103–104 ..	To establish the Jemez National Recreation Area in the State of New Mexico, and for other purposes.	Oct. 12, 1993	1025
103–105 ..	To provide for the reauthorization of the collection and publication of quarterly financial statistics by the Secretary of Commerce through fiscal year 1998, and for other purposes.	Oct. 12, 1993	1030
103–106 ..	National Forest Foundation Act Amendment Act of 1993	Oct. 12, 1993	1031
103–107 ..	To designate the months of October 1993 and October 1994 as "Country Music Month"	Oct. 12, 1993	1033
103–108 ..	Designating October 16, 1993, and October 16, 1994, each as World Food Day	Oct. 18, 1993	1034
103–109 ..	To designate October 19, 1993, as "National Mammography Day"	Oct. 18, 1993	1036
103–110 ..	Military Construction Appropriations Act, 1994	Oct. 21, 1993	1037
103–111 ..	Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 1994.	Oct. 21, 1993	1046
103–112 ..	Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 1994.	Oct. 21, 1993	1082
103–113 ..	Making further continuing appropriations for the fiscal year 1994, and for other purposes	Oct. 21, 1993	1114
103–114 ..	To amend title 5, United States Code, to extend the Federal Physicians Comparability Allowance Act of 1978, and for other purposes.	Oct. 26, 1993	1115
103–115 ..	To amend the definition of a rural community for eligibility for economic recovery funds, and for other purposes.	Oct. 26, 1993	1117
103–116 ..	Catawba Indian Tribe of South Carolina Land Claims Settlement Act of 1993	Oct. 27, 1993	1118
103–117 ..	Designating October 21, 1993, as "National Biomedical Research Day"	Oct. 27, 1993	1139
103–118 ..	Designating the week beginning September 18, 1994 as "National Historically Black Colleges and Universities Week".	Oct. 27, 1993	1141
103–119 ..	To designate the month of October 1993 as "National Down Syndrome Awareness Month"	Oct. 27, 1993	1142
103–120 ..	HUD Demonstration Act of 1993	Oct. 27, 1993	1144
103–121 ..	Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1994.	Oct. 27, 1993	1153
103–122 ..	Department of Transportation and Related Agencies Appropriations Act, 1994	Oct. 27, 1993	1198
103–123 ..	Treasury, Postal Service, and General Government Appropriations Act, 1994	Oct. 28, 1993	1226
103–124 ..	Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994.	Oct. 28, 1993	1275
103–125 ..	Middle East Peace Facilitation Act of 1993	Oct. 28, 1993	1309
103–126 ..	Energy and Water Development Appropriations Act, 1994	Oct. 28, 1993	1312
103–127 ..	Making appropriations for the government of the District of Columbia and other activities chargeable in whole or in part against the revenues of said District for the fiscal year ending September 30, 1994, and for other purposes.	Oct. 29, 1993	1336
103–128 ..	Making further continuing appropriations for the fiscal year 1994, and for other purposes	Oct. 29, 1993	1355
103–129 ..	Rural Electrification Loan Restructuring Act of 1993	Nov. 1, 1993	1356
103–130 ..	To amend the National Wool Act of 1954 to reduce the subsidies that wool and mohair producers receive for the 1994 and 1995 marketing years and to eliminate the wool and mohair programs for the 1996 and subsequent marketing years, and for other purposes.	Nov. 1, 1993	1368
103–131 ..	Designating the beach at 53 degrees 53'51"N, 166 degrees 34'15"W to 53 degrees 53'48"N, 166 degrees 34'21"W on Hog Island, which lies in the Northeast Bay of Unalaska, Alaska as "Arkansas Beach" in commemoration of the 206th regiment of the National Guard, who served during the Japanese attack on Dutch Harbor, Unalaska on June 3 and 4, 1942.	Nov. 1, 1993	1370

Public Law	Title	Approved	107 Stat.
103–132 ..	To direct the Secretary of Agriculture to convey certain lands to the town of Taos, New Mexico .	Nov. 2, 1993	1371
103–133 ..	To approve the extension of nondiscriminatory treatment with respect to the products of Romania.	Nov. 2, 1993	1373
103–134 ..	To designate the Pittsburgh Aviary in Pittsburgh, Pennsylvania as the National Aviary in Pittsburgh.	Nov 8, 1993	1374
103–135 ..	To modify the project for flood control, James River Basin, Richmond, Virginia	Nov. 8, 1993	1375
103–136 ..	Designating the week beginning October 31, 1993, as "National Health Information Management Week".	Nov 8, 1993	1376
103–137 ..	Designating November 22, 1993, as "National Military Families Recognition Day"	Nov. 8, 1993	1377
103–138 ..	Department of the Interior and Related Agencies Appropriations Act, 1994	Nov. 11, 1993	1379
103–139 ..	Department of Defense Appropriations Act, 1994	Nov. 11, 1993	1418
103–140 ..	Veterans' Compensation Rates Amendments of 1993	Nov. 11, 1993	1485
103–141 ..	Religious Freedom Restoration Act of 1993	Nov. 16, 1993	1488
103–142 ..	To amend title 18, United States Code, to authorize the Federal Bureau of Investigation to obtain certain telephone subscriber information.	Nov. 17, 1993	1491
103–143 ..	To designate the Federal building located at 280 South First Street in San Jose, California, as the "Robert F. Peckham United States Courthouse and Federal Building".	Nov. 17, 1993	1493
103–144 ..	El Camino Real de Tierra Adentro Study Act of 1993	Nov. 17, 1993	1494
103–145 ..	El Camino Real Para Los Texas Study Act of 1993	Nov. 17, 1993	1496
103–146 ..	Designating the week beginning November 14, 1993, and the week beginning November 13, 1994, each as "Geography Awareness Week".	Nov. 17, 1993	1498
103–147 ..	To designate the third Sunday in November of 1993 as "National Children's Day"	Nov. 17, 1993	1500
103–148 ..	Designating the week beginning November 7, 1993, and the week beginning November 6, 1994, each as "National Women Veterans Recognition Week".	Nov. 17, 1993	1502
103–149 ..	South African Democratic Transition Support Act of 1993	Nov. 23, 1993	1503
103–150 ..	To acknowledge the 100th anniversary of the January 17, 1893 overthrow of the Kingdom of Hawaii, and to offer an apology to Native Hawaiians on behalf of the United States for the overthrow of the Kingdom of Hawaii.	Nov. 23, 1993	1510
103–151 ..	To authorize the Board of Regents of the Smithsonian Institution to plan, design, and construct the West Court of the National Museum of Natural History building.	Nov. 24, 1993	1515
103–152 ..	Unemployment Compensation Amendments of 1993	Nov. 24, 1993	1516
103–153 ..	To authorize the President to issue a proclamation designating the week beginning on November 21, 1993, and November 20, 1994, as "National Family Week".	Nov. 24, 1993	1521
103–154 ..	To designate the month of November in 1993 and 1994 as "National Hospice Month"	Nov. 24, 1993	1522
103–155 ..	To amend the Indian Environmental General Assistance Program Act of 1992 to extend the authorization of appropriations.	Nov. 24, 1993	1523
103–156 ..	United States Grain Standards Act Amendments of 1993	Nov. 24, 1993	1525
103–157 ..	To designate the periods commencing on November 28, 1993, and ending on December 4, 1993, and commencing on November 27, 1994, and ending on December 3, 1994, as "National Home Care Week".	Nov. 24, 1993	1532
103–158 ..	To authorize the placement of a memorial cairn in Arlington National Cemetery, Arlington, Virginia, to honor the 270 victims of the terrorist bombing of Pan Am Flight 103.	Nov. 24, 1993	1533
103–159 ..	To provide for a waiting period before the purchase of a handgun, and for the establishment of a national instant criminal background check system to be contacted by firearms dealers before the transfer of any firearm.	Nov. 30, 1993	1536
103–160 ..	National Defense Authorization Act for Fiscal Year 1994	Nov. 30, 1993	1547
103–161 ..	To amend title 38, United States Code, to increase the rate of special pension payable to persons who have received the Congressional Medal of Honor.	Nov. 30, 1993	1967
103–162 ..	To designate portions of the Maurice River and its tributaries in the State of New Jersey as components of the National Wild and Scenic Rivers Systems.	Dec. 1, 1993	1968
103–163 ..	To authorize the Air Force Memorial Foundation to establish a memorial in the District of Columbia or its environs.	Dec. 2, 1993	1973
103–164 ..	Designating January 16, 1994, as "National Good Teen Day"	Dec. 2, 1993	1974
103–165 ..	To express appreciation to W. Graham Claytor, Jr., for a lifetime of dedicated and inspired service to the Nation.	Dec. 2, 1993	1975
103–166 ..	To extend authorities under the Middle East Peace Facilitation Act of 1993 by six months	Dec. 2, 1993	1978
103–167 ..	Designating January 2, 1994, through January 8, 1994, as "National Law Enforcement Training Week".	Dec. 2, 1993	1979
103–168 ..	Designating December 1993 as "National Drunk and Drugged Driving Prevention Month"	Dec. 2, 1993	1981
103–169 ..	Lechuguilla Cave Protection Act of 1993	Dec. 2, 1993	1983
103–170 ..	Red River Designation Act of 1993	Dec. 2, 1993	1986
103–171 ..	Older Americans Act Technical Amendments of 1993	Dec. 2, 1993	1988
103–172 ..	Federal Employees Clean Air Incentives Act	Dec. 2, 1993	1995
103–173 ..	International Parental Kidnapping Crime Act of 1993	Dec. 2, 1993	1998
103–174 ..	To authorize the leasing of naval vessels to certain foreign countries	Dec. 2, 1993	2000
103–175 ..	To authorize and direct the Secretary of the Interior to convey certain lands in Cameron Parish, Louisiana, and for other purposes.	Dec. 2, 1993	2002
103–176 ..	Indian Tribal Justice Act	Dec. 3, 1993	2004
103–177 ..	American Indian Agricultural Resource Management Act	Dec. 3, 1993	2011
103–178 ..	Intelligence Authorization Act for Fiscal Year 1994	Dec. 3, 1993	2024
103–179 ..	Patent and Trademark Office Authorization Act of 1993	Dec. 3, 1993	2040
103–180 ..	Negotiated Rates Act of 1993	Dec. 3, 1993	2044
103–181 ..	Hazard Mitigation and Relocation Assistance Act of 1993	Dec. 3, 1993	2054

Public Law	Title	Approved	107 Stat.
103–182	North American Free Trade Agreement Implementation Act	Dec. 8, 1993	2057
103–183	Preventive Health Amendments of 1993	Dec. 14, 1993	2226
103–184	To provide for the addition of the Truman Farm Home to the Harry S Truman National Historic Site in the State of Missouri.	Dec. 14, 1993	2243
103–185	To provide increased flexibility to States in carrying out the Low-Income Home Energy Assistance Program.	Dec. 14, 1993	2244
103–186	To require the Secretary of the Treasury to mint coins in commemoration of the 250th anniversary of the birth of Thomas Jefferson, Americans who have been prisoners of war, the Vietnam Veterans Memorial on the occasion of the 10th anniversary of the Memorial, and the Women in Military Service for America Memorial, and for other purposes.	Dec. 14, 1993	2245
103–187	Designating December 15, 1993, as "National Firefighters Day"	Dec. 14, 1993	2255
103–188	Egg Research and Consumer Information Act Amendments of 1993	Dec. 14, 1993	2256
103–189	Watermelon Research and Promotion Improvement Act of 1993	Dec. 14, 1993	2259
103–190	Fresh Cut Flowers and Fresh Cut Greens Promotion and Information Act of 1993	Dec. 14, 1993	2266
103–191	To amend the Thomas Jefferson Commemoration Commission Act to extend the deadlines for reports.	Dec. 14, 1993	2291
103–192	To extend arbitration under the provisions of chapter 44 of title 28, United States Code, and for other purposes.	Dec. 14, 1993	2292
103–193	To provide for the extension of certain authority for the Marshal of the Supreme Court and the Supreme Court Police.	Dec. 14, 1993	2293
103–194	Lime Research, Promotion, and Consumer Information Improvement Act	Dec. 14, 1993	2294
103–195	To make a technical amendment, and for other purposes	Dec. 14, 1993	2297
103–196	Designating January 16, 1994, as "Religious Freedom Day"	Dec. 14, 1993	2299
103–197	To provide for additional development at War in the Pacific National Historical Park, and for other purposes.	Dec. 17, 1993	2301
103–198	Copyright Royalty Tribunal Reform Act of 1993	Dec. 17, 1993	2304
103–199	Act For Reform In Emerging New Democracies and Support and Help for Improved Partnership with Russia, Ukraine, and Other New Independent States or the FRIENDSHIP Act.	Dec. 17 1993	2317
103–200	Domestic Chemical Diversion Control Act of 1993	Dec. 17, 1993	2333
103–201	To clarify the regulatory oversight exercised by the Rural Electrification Administration with respect to certain electric borrowers.	Dec. 17, 1993	2342
103–202	Government Securities Act Amendments of 1993	Dec. 17, 1993	2344
103–203	Making a technical amendment of the Clayton Act	Dec. 17, 1993	2368
103–204	Resolution Trust Corporation Completion Act	Dec. 17, 1993	2369
103–205	To extend the suspended implementation of certain requirements of the food stamp program on Indian reservations, to suspend certain eligibility requirements for the participation of retail food stores in the food stamp program, and for other purposes.	Dec. 17, 1993	2418
103–206	Coast Guard Authorization Act of 1993	Dec. 20, 1993	2419
103–207	Providing for the convening of the Second Session of the One Hundred Third Congress	Dec. 20, 1993	2456
103–208	Higher Education Technical Amendments of 1993	Dec. 20, 1993	2457
103–209	National Child Protection Act of 1993	Dec. 20, 1993	2490
103–210	To amend title 38, United States Code, to provide additional authority for the Secretary of Veterans Affairs to provide health care for veterans of the Persian Gulf War.	Dec. 20, 1993	2496

NOTE: The text of laws may be ordered in individual pamphlet form (referred to as "slip laws") from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (phone, 202–512–2470). Some laws may not yet be available for purchase.

federal register

Monday
January 3, 1994

Part V

Environmental Protection Agency

Sole Source Aquifer Designation; Pierce County, WA; Notice

ENVIRONMENTAL PROTECTION AGENCY

[FRL–4821–4]

Sole Source Aquifer Designation of the Central Pierce County Aquifer System, Pierce County, WA

AGENCY: Environmental Protection Agency.

ACTION: Final determination.

SUMMARY: Pursuant to section 1424(e) of the Safe Drinking Water Act, the Region 10 Administrator of the U.S. Environmental Protection Agency (EPA) has determined that the Central Pierce County Aquifer System is the principal source of drinking water for the designated area, and that the aquifer system, if contaminated, would create a significant hazard to public health. As a result of this determination, all federal financially-assisted projects proposed in the designated area will be subject to EPA review to ensure that they do not create a significant hazard to public health.

EFFECTIVE DATE: This determination shall be promulgated for purposes of judicial review at 1 Eastern time on January 18, 1994.

ADDRESSES: The information upon which this determination is based is available to the public and may be inspected during normal business hours at the main and satellite branches of the Pierce County Library System, and at the EPA Library, 10th Floor, Park Place Building, 1200 Sixth Avenue, Seattle, Washington 98101.

FOR FURTHER INFORMATION CONTACT: Scott E. Downey, Environmental Protection Specialist, Ground Water Section, WD–133, U.S. Environmental Protection Agency, Region 10, 1200 Sixth Avenue, Seattle, Washington 98101, 206–553–0682.

SUPPLEMENTARY INFORMATION: Notice is hereby given that pursuant to Section 1424(e) of the Safe Drinking Water Act (42 United States Code, 300f, 300h–3(e), Pub. L. 93–523), the Region 10 Administrator of U.S. Environmental Protection Agency has determined that the Central Pierce County Aquifer System is the principal source of drinking water for the designated area, and that the aquifer system, if contaminated, would create a significant hazard to public health. As a result of this determination, federal financially-assisted projects proposed in the designated area will be subject to EPA review to ensure that they do not create a significant hazard to public health.

The information upon which EPA is issuing this final determination has been summarized in the "Support Document for Sole Source Aquifer Designation of the Central Pierce County Aquifer System", EPA 910/R–93–001, prepared by the EPA Region 10 Ground Water Section.

I. Background

Section 1424(e) of the Safe Drinking Water Act states:

> If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the **Federal Register**. After the publication of any such notice, no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.

EPA defines a sole or principal source aquifer as one which supplies at least 50 percent of the drinking water in the area overlying the aquifer. Current EPA guidelines also stipulate that these areas can have no alternative drinking water source(s) which could physically, legally, and economically supply all those who depend upon the aquifer for drinking water. For convenience, all EPA designated sole or principal source aquifers are usually referred to simply as "sole source aquifers". Although EPA has the statutory authority to initiate sole source aquifer designations, the Agency has a longstanding policy of acting only in response to petitions. These petitions may be submitted to EPA by any individual or organization and must document and meet all designation criteria as outlined in the "Sole Source Aquifer Designation Petitioner Guidance", EPA 440/6–87–003.

On June 23, 1987, EPA Region 10 received a sole source aquifer petition from the Tacoma-Pierce County Health Department (TPCHD). The petition requested EPA designation of the "Clover/Chambers Creek Aquifer", an area of approximately 144 square miles of central Pierce County in the State of Washington. On July 29, 1987, EPA requested additional information from the TPCHD. A revised petition was submitted on February 1, 1988. On February 24, 1988, EPA sent the TPCHD a letter which acknowledged that the petition was considered complete, and that the technical review phase would begin.

EPA guidance allows sole source aquifer designations to be delineated for an entire aquifer, an aquifer system, or part of an aquifer that is hydrogeologically separated from the rest of the aquifer. The EPA Region 10 technical review determined that the petitioned Clover/Chamber Creek area was not an entire aquifer or a hydrogeologically separate unit of an aquifer but was located within a larger aquifer system. Thus, the boundaries were extended to those now designated. On July 25, 1988, the TPCHD provided EPA with drinking water consumption estimates for the larger area.

II. Basis for Determination

Pursuant to section 1424(e), the EPA Regional Administrator has determined that the Central Pierce County Aquifer System is the principal drinking water source for the area, and which, if contaminated, would create a significant hazard to public health. Based on the information available to this Agency, the Regional Administrator has made the following findings which are the bases for the determination noted above:

1. The Central Pierce County Aquifer System supplies approximately 60 percent of the average drinking water demand for the area, and approximately 84 percent of the peak drinking water demand for the area.
2. No alternative source or combination of sources can physically, legally, and economically supply all those who depend upon the aquifer system for drinking water.
3. Based upon these two findings, contamination of the Central Pierce County Aquifer System would create a significant hazard to public health.

III. Description of the Central Pierce County Aquifer System

Note: Some information in this section represents an unfootnoted summary from the "Support Document for Sole Source Aquifer Designation of the Central Pierce County Aquifer System", EPA 910/R–93–001, prepared by the EPA Region 10 Ground Water Section.

The EPA technical review determined that the Central Pierce County Aquifer System consists primarily of unconsolidated sediments deposited by glaciers and associated meltwater during the Quaternary Period. Ground water originates almost entirely as precipitation upon the land surface. Recharge to the aquifer system is greatest where the precipitation falls on permeable glacial outwash sediments such as sand or gravel. The ground water moves regionally toward the

Puget Sound and river valleys that constitute the aquifer system boundaries. Locally, the direction and gradient of ground water movement can vary dramatically from the overall regional trend.

Depth to ground water varies from zero to hundreds of feet. The greatest depth to ground water occurs in recharge areas where the unsaturated zone is composed of highly permeable glacial outwash materials. Ground water occurs at or near the land surface in discharge areas and where materials with low permeability, such as glacial till (an unsorted assemblage of clay, silt, sand, pebbles, cobbles, and/or boulders), restricts recharge during the wet season. Seasonal variations in water table elevations of 20 to 30 feet have been observed in some parts of the aquifer system.

Deep wells drilled within the area penetrate multiple productive aquifers of permeable glacial outwash separated by relatively impermeable aquitards of glacial till or non-glacial sediments. The degree of hydrologic connection between individual aquifer units can vary greatly. Ground water discharge occurs to surface water bodies and wetlands within the area (which can also recharge the ground water system), and to surface water bodies which bound the area. Ground water from the aquifer system is naturally low in dissolved solids and can be used for drinking, irrigation, and most industrial purposes without treatment.

The natural sensitivity of the aquifer system to contamination is influenced by the permeability of geologic materials that overlie and occur within the aquifer system, the amount of recharge from precipitation, and the depth to ground water. The potential for contamination is greatest where sediments are permeable, recharge is high, and ground water is shallow.

The relative vulnerability of ground water to contamination also increases from various human activities which provide the opportunity for anthropogenic sources of contamination to enter the system. Subsurface disposal of waste and wastewater is the chief threat to ground water quality over much of the aquifer system. The Tacoma-Pierce County Health Department has identified individual and community septic systems, the subsurface disposal of urban stormwater, and solid waste landfills as principal concerns. Although concentrations of nonpoint contaminants (such as nitrate and chloride) are still generally below drinking water standards, they have increased significantly over time throughout parts of the aquifer system. Man-induced contamination which has exceeded drinking water standards has been documented is some industrial and commercial areas. Several of these areas have been selected for clean-up under the federal Superfund program.

The sole source aquifer boundaries selected by EPA are primarily surface water boundaries located in lowland areas that have eroded downward through aquifer system glacial materials and which receive discharging ground water from the aquifer system. The Puget Sound forms the western boundary of the aquifer system. The Puyallup River forms the northern boundary and also the eastern boundary as far south as the Town of Electron (just northeast of Lake Kapowsin). South of Electron, the eastern boundary follows the ancestral Puyallup River Valley which is now occupied by Lake Kapowsin, Ohop Lake, and Ohop Creek. The Nisqually River forms the southern boundary of the aquifer system from its intersection with Ohop Creek downstream to the Puget Sound.

The petitioner estimates that about 400,000 people live within the aquifer system boundaries or in nearby areas which at least partly utilize ground water from the system. Ground water generally supplies about 60 percent of the drinking water used within the designated area. During peak demands, ground water supplies approximately 84 percent of the drinking water consumed within the area. The petitioner and EPA have determined that although alternative sources of drinking water are physically available, they cannot legally and economically serve all those who now depend upon the aquifer system.

IV. Project Reviews

Designation of a sole source aquifer authorizes EPA to review, at the Agency's discretion, federal financially-assisted projects proposed within the designated area. The principal mechanism used by EPA Region 10 to identify projects for review are Memorandums of Understanding (MOUs) with federal funding agencies. These MOUs stipulate procedures for screening and referring projects to EPA in order to ensure that only projects which may have a significant impact to ground water quality are reviewed. Should the EPA Administrator determine that a project may contaminate an aquifer through its recharge zone so as to create a significant hazard to public health, no commitment for federal financial assistance may be entered into.

EPA also learns of and coordinates the review of proposed projects with other offices within EPA and with various federal, state, local, and tribal agencies that have a responsibility for ground water quality protection. Information obtained from such sources is given full consideration in the sole source aquifer review process. Through such coordination, EPA project reviews can complement, support, and strengthen existing ground water protection mechanisms.

V. Public Comments

In order to obtain public comment on the proposed designation, EPA issued a public notice that was published in the Morning News Tribune on April 22, 1993. The notice was also distributed by mail to various federal, state, tribal, and local officials. The notice stated that (1) EPA was proposing to designate the Central Pierce County Aquifer System as a sole source aquifer based on the petition from the TPCHD and the EPA review; (2) a public hearing would be held if sufficient interest were expressed to EPA by May 25, 1993; (3) a public comment period would remain open until June 15, 1993; and (4) a document that summarized the bases for the proposal was available for review. EPA also issued a press release with similar information on April 23, 1993.

EPA did not receive any requests to hold a public hearing before the period expired and the hearing was cancelled. Three written comments were received by EPA prior to the June 15, 1993 deadline. A letter from the Ground Water Quality Unit Supervisor, Washington Department of Ecology, expressed support for the designation. A letter from the Pacific Northwest Regional Director, U.S. Department of the Interior, Bureau of Reclamation, documented the Bureaus's review of the support document but offered no additional comment.

A letter received on June 11, 1993 from the Chair of the Tacoma-Pierce County Board of Health offered support for the designation, but also requested a 30 day extension of the public comment period and EPA participation in an informal public meeting to hear concerns from interested parties about the impacts of the designation on the community. In response to this request, EPA issued a second public notice on June 18, 1993 that extended the public comment period until July 19, 1993.

Two additional letters were received during the second public comment period. Another member of the Ground Water Quality Unit, Washington Department of Ecology, offered support for the designation but requested additional information on the hydrogeologic analyses which led to the

revision of the petitioned boundary. This information was provided to the Unit Supervisor by a Region 10 Ground Water Section hydrogeologist. A letter from the Water Division Superintendent, Tacoma Public Utilities, stated support for the designation citing the increase in public awareness on the importance and vulnerability of ground water resources.

In response to the Tacoma-Pierce County Board of Health letter of June 11, 1993, EPA participated in an informal public meeting in Tacoma on July 14, 1993. At the meeting, an EPA representative presented an overview of the sole source aquifer program and outlined the Agency's technical review process and basis for selecting the boundaries. Some participants raised questions regarding EPA's determination of aquifer system boundaries. In response, the boundaries selected by EPA are primarily surface water boundaries which act as regionally important ground water discharge areas for aquifer system materials. A detailed description of aquifer system boundaries and the reasons for their selection can be found in the "Support Document for Sole Source Aquifer Designation of the Central Pierce County Aquifer System", EPA 910/R–93–001.

A number of persons at the meeting expressed economic concerns about the designation, some contending that EPA's review authority could hinder economic development by blocking or delaying proposed projects. In response, sole source aquifer designations are not based on economic criteria other than the potential cost of alternative drinking water supplies needed to replace the petitioned aquifer should it become contaminated, i.e, economic impacts from post-designation project reviews are not relevant in the Agency's designation decision.

Regardless, based on past experience, EPA considers fears about dire economic impacts from sole source aquifer project reviews to be largely unfounded. Under the sole source aquifer program, EPA has the authority to review only federal financially-assisted projects proposed over a designated aquifer area. Of these, only those projects with the potential to create a significant hazard to public health have typically been referred to EPA for review. The majority of these reviews have resulted in an approval of funding without any project modification. When EPA has required changes, project proponents seeking federal financial assistance have usually been willing and able to modify projects in order to protect ground water quality. To date, since Region 10's first sole source aquifer designation in 1978, only one project proponent has been either unwilling or unable to modify the project design in order to receive EPA approval of federal funding.

EPA acknowledges that ground water quality protection measures may increase costs to a project or cause delays if modifications are required. Increased project costs or significant delays due to EPA reviews are not common because most projects are already designed in accordance with existing standards established by federal, state, or local entities, and such standards are often adequate. Involving EPA early on in the planning and design phases of a project greatly facilitates a more timely and efficient review, and increases the likelihood of EPA approval without modification. Where EPA requires project modifications, the Agency believes that such measures represent an investment that will pay for itself many times over. The high cost of replacing contaminated drinking water supplies or cleaning up polluted ground water (when possible) underscores the wisdom of taking steps to prevent or reduce the possibility of contamination from occurring in the first place.

VI. Summary

Today's action affects only the Central Pierce County Aquifer System located in the State of Washington. This action provides a review process that allows ground water quality protection measures to be incorporated into federal financially-assisted projects.

Gerald A. Emison,

Acting Regional Administrator, U.S. Environmental Protection Agency, Region 10.

[FR Doc. 93–32035 Filed 12–30–93; 8:45 am]

BILLING CODE 6560–50–P

federal register

Monday
January 3, 1994

Part VI

Department of Commerce

International Trade Administration

19 CFR Part 356

Panel Review Under Article 1904 of the North American Free Trade Agreement; Final Rule

DEPARTMENT OF COMMERCE

International Trade Administration

19 CFR Part 356

Docket No. 931247–3347

Panel Review Under Article 1904 of the North American Free Trade Agreement

AGENCY: International Trade Administration, Department of Commerce.

ACTION: Interim-final rule and request for comments.

SUMMARY: Title IV of the North American Free Trade Agreement Implementation Act of 1993 ("NAFTA Act"), establishes procedures for review by a binational panel of United States antidumping and countervailing duty final determinations involving products from Canada or the United Mexican States ("free trade area countries" as defined by 19 U.S.C. 1516a(f)(10)) and for requesting panel review of free trade area country antidumping and countervailing duty final determinations involving products of the United States. Title IV of the NAFTA Act implements Chapter Nineteen of the North American Free Trade Agreement ("Agreement"). As authorized by section 402(g) of the NAFTA Act, these regulations are intended to implement certain administrative procedures required by Article 1904 of the Agreement and the NAFTA Act. These regulations replace corresponding regulations issued pursuant to the United States-Canada Free Trade Agreement.

DATES: These regulations take effect on January 1, 1994, or on the date that the Agreement enters into force if that date is subsequent to January 1, 1994. The International Trade Administration will publish a document giving notice of the effective date of these regulations if the effective date is not January 1, 1994.

Written comment must be received not later than March 2, 1994.

ADDRESSES: Address written comments to Stacy J. Ettinger, Attorney-Advisor, Office of the Chief Counsel for Import Administration, room B–099, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, DC 20230.

FOR FURTHER INFORMATION CONTACT: Lisa B. Koteen, 202–482–0836, or Stacy J. Ettinger, 202–482–4618.

SUPPLEMENTARY INFORMATION:

Background

Chapter Nineteen of the Agreement establishes a mechanism for resolving disputes between the United States and free trade area countries with respect to antidumping and countervailing duty cases. The central feature of the mechanism is the replacement of domestic judicial review of determinations in antidumping and countervailing duty cases involving imports from free trade area countries with review by independent binational panels. The United States and the involved free trade area country will continue to apply their own national antidumping and countervailing duty laws to goods imported from the other country. In such cases, independent binational panels acting in place of national courts will expeditiously review final determinations under these laws to decide whether they are consistent with the antidumping or countervailing duty law of the country that made the determination. These determinations include final antidumping and countervailing duty determinations by the Department of Commerce ("the Department"), and final injury determinations by the International Trade Commission.

The Agreement provides that only the involved governments may invoke the panel review process; however, the governments of the involved countries will automatically trigger panel review in response to a timely request from any person who otherwise could have challenged the determination in court. Counsel for (or representative of) interested parties that were parties to the administrative proceeding that is being challenged will argue before the panel, as they would before a court. The Agreement also requires that the United States and the free trade area countries protect sensitive business information against unlawful disclosure in the panel review process.

Title IV of the NAFTA Act (Pub. L. 103–182, 107 Stat. 2057) amends United States law to implement Chapter Nineteen of the Agreement by limiting judicial review in cases involving free trade area country merchandise, establishing procedures whereby private parties may request binational panel review, providing an organizational structure for administering United States responsibilities under Chapter Nineteen, and making other conforming amendments to United States law. More specifically, section 402(g) of the NAFTA Act authorizes the Department, as the administering authority under Title VII of the Tariff Act of 1930 ("Act"), to issue regulations to implement Chapter Nineteen of the Agreement.

These regulations are intended to implement certain administrative procedures required by Chapter Nineteen of the Agreement before an administrative proceeding has been sent to the Court of International Trade or a binational panel, as well as the administrative responsibilities of the Department that continue during and after panel review. These regulations replace corresponding regulations issued pursuant to the United States-Canada Free Trade Agreement. These regulations are necessary to provide for notice of intent to seek judicial review, request for panel review, notice of receipt by the Government of a free trade area country of scope determinations, continued suspension of liquidation, release of business proprietary and privileged information under protective order during a panel review, and sanctions for violations of such protective orders. The Department currently is reviewing procedures for release of business proprietary information under protective order during antidumping and countervailing duty administrative proceedings. Any changes made in procedures as a result of that review will be considered for incorporation into these regulations. The procedures for proceedings before binational panels are being implemented through Rules of Procedure negotiated by the United States and the free trade area countries. These regulations complement the Rules of Procedure and should be used in conjunction with the Rules.

Administrative Procedure Act

This interim rule is exempt from all requirements of section 553 of the Administrative Procedure Act (5 U.S.C. 553), including notice and opportunity to comment and delay of the effective date, because it implements Chapter Nineteen of the Agreement and thus relates to a foreign affairs function of the United States.

Executive Order 12866

This rule was not reviewed by the Office of Management and Budget under Executive Order 12866.

Paperwork Reduction Act

This rule does not contain a collection of information subject to the requirements of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). The collections of information contained in these regulations occur within the course of ongoing investigations or actions initiated prior to the determinations that are reviewable by binational panels under the Agreement. Thus they are not covered by the Paperwork Reduction Act. See 5 CFR 1320.3(c).

Regulatory Flexibility Act

The Regulatory Flexibility Act does not apply to this rule because the rule was not required to be promulgated as a proposed rule before issuance as a final rule by section 553 of the Administrative Procedure Act or by any other law. Accordingly, neither an initial nor final Regulatory Flexibility Analysis has been or will be prepared.

Executive Order 12612

This rule does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism assessment under Executive Order 12612 (52 FR 41685, October 30, 1987).

Entry Into Force

It is anticipated that the Agreement will enter into force on January 1, 1994. The Office of the United States Trade Representative will confirm in a **Federal Register** notice the precise date of the Agreement's entry into force.

List of Subjects in 19 CFR Part 356

Antidumping, Canada, Countervailing duty, Imports, Judicial review, Penalties, Trade agreements, United Mexican States.

19 CFR Part 356 is revised to read as follows:

PART 356—PROCEDURES AND RULES FOR IMPLEMENTING ARTICLE 1904 OF THE NORTH AMERICAN FREE TRADE AGREEMENT

Subpart A—Scope and Definitions

Sec.
356.1 Scope.
356.2 Definitions.

Subpart B—Procedures for Commencing Review of Final Determinations

356.3 Notice of intent to commence judicial review.
356.4 Request for panel review.
356.5 [Reserved]
356.6 Receipt of notice of a scope determination by the Government of a FTA country.
356.7 Request to determine when the Government of a FTA country received notice of a scope determination.
356.8 Continued suspension of liquidation.

Subpart C—Proprietary and Privileged Information

356.9 Persons authorized to receive proprietary information.
356.10 Procedures for obtaining access to proprietary information.
356.11 Procedures for obtaining access to privileged information.

Subpart D—Violation of a Protective Order or a Disclosure Undertaking

356.12 Sanctions for violation of a protective order or disclosure undertaking.
356.13 Suspension of rules.
356.14 Report of violation and investigation.
356.15 Initiation of proceedings.
356.16 Charging letter.
356.17 Request to charge.
356.18 Interim sanctions.
356.19 Request for a hearing.
356.20 Discovery.
356.21 Subpoenas.
356.22 Prehearing conference.
356.23 Hearing.
356.24 Proceeding without a hearing.
356.25 Witnesses.
356.26 Initial decision.
356.27 Final decision.
356.28 Reconsideration.
356.29 Confidentiality.
356.30 Sanctions for violations of a protective order for privileged information.

Authority: 19 U.S.C. 1516a and 1677f(f), unless otherwise noted.

Subpart A—Scope and Definitions

§ 356.1 Scope.

This part sets forth procedures and rules for the implementation of Article 1904 of the North American Free Trade Agreement under the Tariff Act of 1930, as amended by title IV of the North American Free Trade Agreement Implementation Act of 1993 (19 U.S.C. 1516a and 1677f(f)). This part is authorized by section 402(g) of the North American Free Trade Agreement Implementation Act of 1993.

§ 356.2 Definitions.

For purposes of this part:

(a) *Act* means the Tariff Act of 1930, as amended;

(b) *Administrative law judge* means the person appointed under 5 U.S.C. 3105 who presides over the taking of evidence as provided by subpart D of this part;

(c) *Affected party* means a person against whom sanctions have been proposed for alleged violation of a protective order or disclosure undertaking but who is not a charged party;

(d) *Agreement* means the North American Free Trade Agreement between Canada, the United Mexican States and the United States, signed on December 17, 1992; or, with respect to binational panel or extraordinary challenge proceedings underway as of such date, or any binational panel or extraordinary challenge proceedings that may proceed between Canada and the United States following any withdrawal from the Agreement by Canada or the United States, the United States-Canada Free Trade Agreement between Canada and the United States, which came into force on January 1, 1989;

(e) *APO Sanctions Board* means the Administrative Protective Order Sanctions Board;

(f) *Article 1904 Panel Rules* means the NAFTA Article 1904 Panel Rules, negotiated pursuant to Article 1904 of the North American Free Trade Agreement between Canada, the United Mexican States and the United States, and any subsequent amendments; or, with respect to binational panel proceedings underway as of such date, or any binational panel proceedings that may proceed between the Canada and the United States following any withdrawal from the Agreement by Canada or the United States, the *Article 1904 Panel Rules*, as amended, which came into force on January 1, 1989;

(g) *Authorized agency of a free trade area country* means:

(1) In the case of Canada, any Canadian government agency that is authorized by Canadian law to request the Department to initiate proceedings to impose sanctions for an alleged violation of a disclosure undertaking; and

(2) In the case of Mexico, any Mexican government agency that is authorized by Mexican law to request the Department to initiate proceedings to impose sanctions for an alleged violation of a disclosure undertaking;

(h) *Binational panel* means a binational panel established pursuant to Annex 1901.2 to Chapter Nineteen of the Agreement for the purpose of reviewing a final determination;

(i) *Charged party* means a person who is charged by the Deputy Under Secretary with violating a protective order or a disclosure undertaking;

(j) *Chief Counsel* means the Chief Counsel for Import Administration, U.S. Department of Commerce, or designee;

(k) *Days* means calendar days, except that a deadline which falls on a weekend or holiday shall be extended to the next working day;

(l) *Department* means the U.S. Department of Commerce;

(m) *Deputy Under Secretary* means the Deputy Under Secretary for International Trade, U.S. Department of Commerce;

(n) *Director* means an Office Director under the Deputy Assistant Secretary for Investigations, U.S. Department of Commerce, or designee, if the panel review is of a final determination by the Department under section 751 of the Act, or an Office Director under the Deputy Assistant Secretary for Compliance, or designee, if the panel

review is of a final determination by the Department under section 705(a) or 735(a) of the Act;

(o) *Disclosure undertaking* means:

(1) In the case of Canada, the Canadian mechanism for protecting proprietary or privileged information during proceedings pursuant to Article 1904 of the Agreement, as prescribed by subsection 77.21(2) of the Special Import Measures Act, as amended; and

(2) In the case of Mexico, the Mexican mechanism for protecting proprietary or privileged information during proceedings pursuant to Article 1904 of the Agreement, as prescribed by the Ley de Comercio Exterior and its regulations;

(p) *Extraordinary challenge committee* means the committee established pursuant to Annex 1904.13 to Chapter Nineteen of the Agreement to review decisions of a panel or conduct of a panelist;

(q) *Final determination* means "final determination" as defined by Article 1911 of the Agreement;

(r) *Free trade area country* or *FTA country* means "free trade area country" as defined by section 516A(f)(10) of the Act (19 U.S.C. 1516a(f)(10));

(s) *Investigating authority* means the competent investigating authority that issued the final determination subject to review and includes, in respect of the issuance, amendment, modification or revocation of a protective order or disclosure undertaking, any person authorized by the investigating authority;

(t) *Lesser-included sanction* means a sanction of the same type but of more limited scope than the proposed sanction for violation of a protective order or disclosure undertaking; thus, a one-year bar on representation before the Department is a lesser-included sanction of a proposed seven-year bar;

(u) *Letter of transmittal* means a document marked according to the requirements of 19 CFR 353.31(e)(2)(i)–(v) or 355.31(e)(2)(i)–(v);

(v) *Official publication* means:

(1) In the case of Canada, the *Canada Gazette;*

(2) In the case of Mexico, the Diario Oficial de la Federacion; and

(3) In the case of the United States, the **Federal Register**;

(w) *Panel review* means review of a final determination pursuant to Chapter Nineteen of the Agreement;

(x) *Party to the proceeding* means a person that would be entitled, under section 516A of the Act (19 U.S.C. 1516a), to commence proceedings for judicial review of a final determination;

(y) *Participant* means a party to the proceeding that files a Complaint or a Notice of Appearance in a panel review, and the Department;

(z) *Parties* means, in an action under subpart D of this part, the Department and the charged party or affected party;

(aa) *Person* means, an individual, partnership, corporation, association, organization, or other entity;

(bb) *Privileged information* means:

(1) With respect to a panel review of a final determination made in Canada, information of the investigating authority that is subject to the solicitor-client privilege under the laws of Canada, or that constitutes part of the deliberative process with respect to the final determination, and with respect to which the privilege has not been waived;

(2) With respect to a panel review of a final determination made in Mexico:

(i) Information of the investigating authority that is subject to attorney-client privilege under the laws of Mexico; or

(ii) Internal communications between officials of the Secretaria de Comercio y Fomento Industrial in charge of antidumping and countervailing duty investigations or communications between those officials and other government officials, where those communications constitute part of the deliberative process with respect to the final determination; and

(3) With respect to a panel review of a final determination made in the United States, information of the investigating authority that is subject to the attorney-client, attorney work product or government deliberative process privilege under the laws of the United States and with respect to which the privilege has not been waived;

(cc) *Proprietary information* means:

(1) With respect to a panel review of a final determination made in Canada, information referred to in subsection 84(3) of the Special Import Measures Act, as amended, or subsection 45(3) of the Canadian International Trade Tribunal Act, as amended, with respect to which the person who designated or submitted the information has not withdrawn the person's claim as to the confidentiality of the information;

(2) With respect to a panel review of a final determination made in Mexico, informacion confidencial, as defined under article 80 of the Ley de Comercio Exterior and its regulations; and

(3) With respect to a panel review of a final determination made in the United States, business proprietary information under section 777(f) of the Act (19 U.S.C. 1677f(f)) and information the disclosure of which the Department has decided is limited under the procedures adopted pursuant to Article 1904.14 of the Agreement, including business or trade secrets; production costs; terms of sale; prices of individual sales, likely sales, or offers; names of customers, distributors, or suppliers; exact amounts of the subsidies received and used by a person; names of particular persons from whom proprietary information was obtained; and any other business information the release of which to the public would cause substantial harm to the competitive position of the submitter;

(dd) *Protective order* means a protective order issued by the Department under 19 CFR 356.10(c) or 356.11(c);

(ee) *Scope determination* means a determination by the Department, reviewable under section 516A(a)(2)(B)(vi) of the Act (19 U.S.C. 1516a(a)(2)(B)(vi), as to whether a particular type of merchandise is within the class or kind of merchandise described in an existing finding of dumping or an antidumping or countervailing duty order covering free trade area country merchandise;

(ff) *Secretariat* means the Secretariat established pursuant to Article 2002 of the Agreement and includes the Secretariat sections located in Canada, Mexico and the United States;

(gg) *Secretary* means the Secretary of the Canadian section of the Secretariat, the Secretary of the Mexican section of the Secretariat, or the Secretary of the United States section of the Secretariat and includes any person authorized to act on behalf of the Secretary;

(hh) *Service address* means the address of the counsel of record for a person, including any facsimile number submitted with that address, or, where a person is not represented by counsel, the address set out by the person in a Request for Panel Review, Complaint or Notice of Appearance as the address at which the person may be served, including any facsimile number submitted with that address, or where a Change of Service Address has been filed by a person, the new service address set out as the service address in that form, including any facsimile number submitted with that address;

(ii) *Service list* means, with respect to a panel review of a final determination made in the United States, the list maintained by the investigating authority of persons who have been served in the proceeding leading to the final determination;

(jj) *Under Secretary* means the Under Secretary for International Trade, U.S. Department of Commerce, or designee;

(kk) *United States section of the Secretariat* means, for the purposes of filing, United States Secretary, NAFTA

Secretariat, room 2061, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, DC 20230.

Subpart B—Procedures for Commencing Review of Final Determinations

§ 356.3 Notice of intent to commence judicial review.

A party to a proceeding who intends to commence judicial review of a final determination made in the United States shall file a Notice of Intent to Commence Judicial Review, which shall contain such information, and be in such form, manner, and style, including service requirements, as prescribed by the Article 1904 Panel Rules, within 20 days after:

(a) The date of publication in the **Federal Register** of the final determination; or

(b) The date on which the notice of the final determination was received by the Government of the FTA country if the final determination was not published in the **Federal Register**.

§ 356.4 Request for panel review.

A party to a proceeding who seeks panel review of a final determination shall file a Request for Panel Review, which shall contain such information, and be in such form, manner, and style, including service requirements, as prescribed by the Article 1904 Panel Rules, within 30 days after:

(a) The date of publication in the official publication of the final determination; or

(b) The date on which the notice of the final determination was received by the United States Government or the Government of the FTA country if the final determination was not published in the official publication.

§ 356.5 [Reserved.]

§ 356.6 Receipt of notice of a scope determination by the Government of a FTA country.

(a) Where the Department has made a scope determination, notice of such determination shall be deemed received by the Government of a FTA country when a certified copy of the determination is delivered to the chancery of the Embassy of the FTA country during its normal business hours.

(b) Where feasible, the Department, or an agent therefor, will obtain a certificate of receipt signed by a person authorized to accept delivery of documents to the Embassy of the FTA country acknowledging receipt of the scope determination. The certificate will describe briefly the document being delivered to the Embassy of the FTA country, state the date and time of receipt, and include the name and title of the person who signs the certificate. The certificate will be retained by the Department in its public files pertaining to the scope determination at issue.

§ 356.7 Request to determine when the Government of a FTA country received notice of a scope determination.

(a) Pursuant to section 516A(g)(10) of the Act (19 U.S.C. 1516a(g)(10)), any party to the proceeding may request in writing from the Department the date on which the Government of a FTA country received notice of a scope determination made by the Department.

(b) A request shall be made by filing a written request and the correct number of copies in accordance with the requirements set forth in 19 CFR 353.31(d) and (e)(2) or 355.31(d) and (e)(2) with the Secretary of Commerce, Attention: Import Administration, Central Records Unit, room B–099, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, DC 20230. A letter of transmittal must be bound to the original and each copy as the first page of the request.

(c) The requesting party shall serve a copy of the Request to Determine When the Government of [insert name of applicable FTA country] Received Notice of a Scope Determination by first class mail or personal service on any interested party on the Department's service list in accordance with the service requirements listed in 19 CFR 353.31(g) or 355.31(g).

(d) The Department will respond to the request referred to in paragraph (b) of this section within five business days of receipt.

§ 356.8 Continued suspension of liquidation.

(a) *In general.* In the case of an administrative determination specified in clause (iii) or (vi) of section 516A(a)(2)(B) of the Act (19 U.S.C. 1516a(a)(2)(B)(iii) and (vi)) and involving free trade area country merchandise, the Department shall not order liquidation of entries of merchandise covered by such a determination until the forty-first day after the date of publication of the notice described in clause (iii) or receipt of the determination described in clause (vi), as appropriate. If requested, the Department will order the continued suspension of liquidation of such entries in accordance with the terms of paragraphs (b), (c), and (d) of this section.

(b) *Eligibility to request continued suspension of liquidation.* (1) A participant in a binational panel review that was a domestic party to the proceeding, as described in section 771(9)(C), (D), (E), (F), or (G) of the Act (19 U.S.C. 1677(9)(C), (D), (E), (F) and (G)), may request continued suspension of liquidation of entries of merchandise covered by the administrative determination under review by the panel and that would be affected by the panel review.

(2) A participant in a binational panel review that was a party to the proceeding, as described in section 771(9)(A) of the Act (19 U.S.C. 1677(9)(A)), may request continued suspension of liquidation of the merchandise which it manufactured, produced, exported, or imported and which is covered by the administrative determination under review by the panel.

(c) *Request for continued suspension of liquidation.* A request for continued suspension of liquidation must include:

(1) The name of the final determination subject to binational panel review and the case number assigned by the Department;

(2) The caption of the binational panel proceeding;

(3) The name of the requesting participant;

(4) The requestor's status as a party to the proceeding and as a participant in the binational panel review; and

(5) The specific entries to be suspended by name of manufacturer, producer, exporter, or U.S. importer.

(d) *Filing and service.* (1) A request for Continued Suspension of Liquidation must be filed with the Assistant Secretary for Import Administration, room B–099, 14th and Constitution Avenue, NW., Washington, DC 20230, in accordance with the requirements set forth in 19 CFR 353.31(d) and (e)(2) or 355.31(d) and (e)(2). A letter of transmittal must be bound to the original and each copy as the first page of the request. The envelope and the first page of the request must be marked: Panel Review—Request for Continued Suspension of Liquidation. The request may be made no earlier than the date on which the first request for binational panel review is filed.

(2) The requesting party shall serve a copy of the Request for Continued Suspension of Liquidation on the United States Secretary and all parties to the proceeding in accordance with the requirements of 19 CFR 353.31(g) or 19 CFR 355.31(g).

(e) *Termination of Continued Suspension.* Upon completion of the panel review, including any panel review of remand determinations and any review by an extraordinary

challenge committee, the Department will order liquidation of entries, the suspension of which was continued pursuant to this section.

Subpart C—Proprietary and Privileged Information

§ 356.9 Persons authorized to receive proprietary information.

Persons described in paragraphs (a), (d), (e), (f) and (g) of this section shall, and persons described in paragraphs (b) and (c) of this section may, be authorized by the Department to receive access to proprietary information if they comply with this subpart and such other conditions imposed upon them by the Department:

(a) The members of, and appropriate staff of, a binational panel or extraordinary challenge committee;

(b) Counsel to participants in panel reviews and professionals retained by, or under the direction or control of such counsel, provided that the counsel or professional does not participate in competitive decision-making activity (such as advice on production, sales, operations, or investments, but not legal advice) for the participant represented or for any person who would gain competitive advantage through knowledge of the proprietary information sought;

(c) Other persons who are retained or employed by and under the direction or control of a counsel or professional, panelist, or committee member who has been issued a protective order, such as paralegals, law clerks, and secretaries, if such other persons are:

(1) Not involved in the competitive decision-making of a participant to the panel review or for any person who would gain competitive advantage through knowledge of the proprietary information sought; and

(2) Have agreed to be bound by the terms set forth on the application for protective order of the counsel or professional, panelist, or committee member;

(d) Each Secretary and every member of the staff of the Secretariat;

(e) Such officials of the United States Government (other than an officer or employee of the investigating authority that issued the final determination subject to review) as the United States Trade Representative informs the Department require access to proprietary information for the purpose of evaluating whether the United States should seek an extraordinary challenge committee review of a panel determination;

(f) Such officials of the Government of a FTA country as an authorized agency of the FTA country informs the Department require access to proprietary information for the purpose of evaluating whether the FTA country should seek an extraordinary challenge committee review of a panel determination; and

(g) Every court reporter, interpreter and translator employed in a panel or extraordinary challenge committee review.

§ 356.10 Procedures for obtaining access to proprietary information.

(a) *Persons who must file an application for disclosure under protective order.* In order to be permitted access to proprietary information in the administrative record of a final determination under review by a panel, all persons described in §§ 356.9 (a), (b), (d), (e), (f) and (g) shall file an application for a protective order. The procedures for applying for a protective order described in paragraph (b) of this section apply as well to amendments or modifications filed by persons described in § 356.9.

(b) *Procedures for applying for a protective order—(1) Contents of applications.* (i) The Department has adopted application forms for disclosure of proprietary information which are available from the United States section of the Secretariat or the Central Records Unit, room B–099, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, DC 20230. The application forms may be amended from time to time.

(ii) Such forms require the applicant to submit a personal sworn statement stating, in addition to such other terms as the Department may require, that the applicant shall:

(A) Not disclose any proprietary information obtained under protective order and not otherwise available to the applicant, to any person other than:

(*1*) An official of the Department involved in the particular panel review in which the proprietary information is part of the administrative record;

(*2*) The person from whom the information was obtained;

(*3*) A person who has been granted access to the proprietary information at issue under § 356.9; and

(*4*) A person employed by and under the direction or control of a counsel or professional, panelist, or committee member who has been issued a protective order, such as a paralegal, law clerk, or secretary if such person:

(*i*) Is not involved in competitive decision-making for a participant in the panel review or for any person that would gain competitive advantage through knowledge of the proprietary information sought; and

(*ii*) Has agreed to be bound by the terms set forth in the application for protective order by the counsel, professional, panelist, or committee member;

(B) Not use any of the proprietary information not otherwise available to the applicant for purposes other than proceedings pursuant to Article 1904 of the Agreement;

(C) Upon completion of the panel review, or at such earlier date as may be determined by the Department, return to the Department or certify to the Department the destruction of all documents released under the protective order and all other documents containing the proprietary information (such as briefs, notes, or charts based on any such information received under the protective order); and

(D) Acknowledge that breach thereof may subject the signatory to sanctions under § 356.12.

(2) *Timing of application for disclosure under protective order*—(i) *Persons described in § 356.9(a) (panelists, etc.).* A person described in § 356.9(a) may file an application after a Notice of Request for Panel Review has been filed with the Secretariat.

(ii) *Persons described in § 356.9(b) (counsel, etc.).* A person described in § 356.9(b) may file an application at any time but not before that person files a Complaint or a Notice of Appearance.

(iii) *Persons described in § 356.9(d) (Secretaries, etc.).* A person described in § 356.9(d) shall file an application immediately upon assuming official responsibilities in the Secretariat.

(iv) *Persons described in § 356.9 (e), (f) or (g) (designated Government officials or court reporters, etc.).* A person described in § 356.9 (e), (f) or (g) shall file an application before seeking or obtaining access to proprietary information.

(3) *Filing of applications.* A person described in § 356.9 (a), (b), (d), (e), (f) or (g) shall file the completed original and five copies of an application with the United States section of the Secretariat which, in turn, shall submit the original and one copy of the application to the Department. A letter of transmittal must be bound to the original and each copy as the first page of the document.

(4) *Service of applications*—(i) *Persons described in §§ 356.9(b) (counsel, etc.).* A person described in § 356.9(b) who files an application before the expiration of the time period fixed under the Article 1904 Panel Rules for filing a Notice of Appearance in the

panel review shall serve one copy of the application on each person listed on the service list in accordance with paragraphs (b)(4) (ii) and (iii) of this section. In any other case, such person shall serve one copy of the application on each participant, other than the investigating authority, in accordance with paragraphs (b)(4) (ii) and (iii) of this section.

(ii) *Method of service.* A document may be served by:

(A) Delivering a copy of the document to the service address of the participant;

(B) Sending a copy of the document to the service address of the participant by facsimile transmission or by expedited delivery courier or expedited mail service; or

(C) Personal service on the participant.

(iii) *Proof and date of service.* A proof of service shall appear on, or be affixed to, the document. Where a document is served by expedited delivery courier or expedited mail service, the date of service set out in the affidavit of service or certificate of service shall be the day on which the document is consigned to the expedited delivery courier service or expedited mail service.

(5) *Release to employees of panelists, committee members, and counsel or professionals.* A person described in § 356.9(c), including a paralegal, law clerk, or secretary, may be permitted access to proprietary information disclosed under protective order by the counsel, professional, panelist, or extraordinary challenge committee member who retains or employs such person, if such person has agreed to the terms of the protective order issued to the counsel, professional, panelist, or extraordinary challenge committee member, by signing and dating a completed copy of the application for protective order of the representative counsel, professional, panelist or extraordinary challenge committee member in the location indicated in that application.

(6) *Counsel or professional who retains access to proprietary information under a protective order issued during the administrative proceeding.* A person described in § 356.9(b) who has been granted access to proprietary information under protective order during an administrative proceeding that resulted in a final determination that becomes the subject of panel review may, if permitted by the terms of the protective order previously issued by the Department, retain such information until the applicant receives a protective order under this part.

(c) *Issuance and service of protective orders*—(1) *Persons described in § 356.9(a) (panelists, etc.).* (i) Upon receipt by the Department of an application from a person described in § 356.9(a), the Department will issue a protective order authorizing disclosure of proprietary information included in the administrative record of the final determination that is the subject of the panel review at issue. The Department shall transmit the original and four copies of the protective order to the United States section of the Secretariat which, in turn, shall transmit the original to the applicant and serve one copy of the order on each participant, other than the investigating authority, in accordance with paragraphs (b)(4) (ii) and (iii) of this section.

(ii) A member of a binational panel or extraordinary challenge committee proceeding initiated under the United States-Canada Free Trade Agreement to whom the Department issues a protective order must countersign the protective order and return one copy of the countersigned protective order to the United States section of the Secretariat.

(2) *Persons described in §§ 356.9 (b) or (c) (counsel, etc., or paralegals, etc.)*—(i) *Opportunity to object to disclosure.* The Department will not rule on an application filed by a person described in § 356.9(b) until at least ten days after the request is filed, unless there is compelling need to rule more expeditiously. Unless the Department has indicated otherwise, any person may file an objection to the application within seven days of filing of the application. Any such objection shall state the specific reasons in the view of such person why the application should not be granted. One copy of the objection shall be served on the applicant and on all persons who were served with the application. Service shall be made in accordance with paragraphs (b)(4) (ii) and (iii) of this section. Any reply to an objection will be considered if it is filed before the Department renders a decision.

(ii) *Timing of decisions on applications.* Normally, the Department will render a decision to approve or deny an application within 14 days. If any person files an objection, the Department will normally render the decision within 30 days.

(iii) *Approval of applications.* If appropriate, the Department will issue a protective order permitting the release of proprietary information to the applicant.

(iv) *Denial of applications.* If the Department denies an application, it shall issue a letter notifying the applicant of its decision and the reasons therefor.

(v) *Issuance of protective orders.* If the Department issues a protective order to a person described in § 356.9(b), that person shall immediately file four copies of the protective order with the United States section of the Secretariat and shall serve one copy of the order on each participant, other than the investigating authority, in accordance with paragraphs (b)(4) (ii) and (iii) of this section.

(3) *Persons described in § 356.9 (d) or (g) (Secretaries, etc., or court reporters, etc.).* Upon receipt by the Department of an application from a person described in § 356.9 (d) or (g), the Department will issue a protective order authorizing disclosure of proprietary information to the applicant. The Department shall transmit the original and four copies of the protective order to the United States section of the Secretariat.

(4) *Persons described in § 356.9 (e) or (f) (designated Government officials).* (i) Upon receipt by the Department of an application from a person described in § 356.9 (e) or (f), the Department will issue a protective order authorizing disclosure of proprietary information included in the record of the panel review at issue. The Department shall transmit the original and four copies of the protective order to the United States section of the Secretariat which, in turn, shall transmit the original to the applicant and serve one copy of the document on each participant, other than the investigating authority, in accordance with paragraphs (b)(4) (ii) and (iii) of this section.

(d) *Modification or revocation of protective orders*—(1) *Notification.* If any person believes that changed conditions of fact or law, or the public interest, may require that a protective order issued pursuant to paragraph (c) of this section be modified or revoked, in whole or in part, such person may notify the Department in writing. The notification shall state the changes desired and the changed circumstances warranting such action and shall include materials and argument in support thereof. Such notification shall be served by the person submitting it upon the person to whom the protective order was issued. Responses to the notification may be filed within 20 days after the notification is filed unless the Department indicates otherwise. The Department may also consider such action on its own initiative.

(2) *Issuance of modification or revocation.* If the Department modifies or revokes a protective order pursuant to paragraph (d) of this section, the Department shall transmit the original

and four copies of the modification or Notice of Revocation to the United States section of the Secretariat which, in turn, shall transmit the original to the person to whom the protective order was issued and serve one copy on each participant, other than the investigating authority, in accordance with paragraphs (b)(4) (ii) and (iii) of this section.

§ 356.11 Procedures for obtaining access to privileged information.

(a) *Persons who may apply for access to privileged information under protective order and filing of applications*—(1) *Panelists.* (i) If a panel decides that *in camera* examination of a document containing privileged information in an administrative record is necessary in order for the panel to determine whether the document, or portions thereof, should be disclosed under a Protective Order for Privileged Information, each panelist who is to conduct the *in camera* review, pursuant to the rules of procedure adopted by the United States and the free trade area countries to implement Article 1904 of the Agreement, shall submit an application for disclosure of the privileged information under Protective Order for Privileged Information to the United States section of the Secretariat for filing with the Department; and

(ii) If a panel orders disclosure of a document containing privileged information, any panelist who has not filed an application pursuant to paragraph (a)(1)(i) of this section shall submit an application for disclosure of the privileged information under a Protective Order for Privileged Information to the United States section of the Secretariat for filing with the Department.

(2) *Designated officials of the United States Government.* Where, in the course of a panel review, the panel has reviewed privileged information under a Protective Order for Privileged Information, and the issue to which such information pertains is relevant to the evaluation of whether the United States should request an extraordinary challenge committee, each official of the United States Government (other than an officer or employee of the investigating authority that issued the final determination subject to review) whom the United States Trade Representative informs the Department requires access for the purpose of such evaluation shall file the completed original and five copies of an application for a Protective Order for Privileged Information with the United States section of the Secretariat which, in turn, shall submit the original and one copy of the application to the Department.

(3) *Designated officials of the government of a FTA country.* Where, in the course of a panel review, the panel has reviewed privileged information under a Protective Order for Privileged Information, and the issue to which such information pertains is relevant to the evaluation of whether the Government of an involved FTA country should request an extraordinary challenge committee, each official of the Government of the involved FTA country whom an authorized agency of the involved FTA country informs the Department requires access for the purpose of such evaluation shall file the completed original and five copies of an application for a Protective Order for Privileged Information with the United States section of the Secretariat which, in turn, shall submit the original and one copy of the application to the Department.

(4) *Members of an extraordinary challenge committee.* Where an extraordinary challenge record contains privileged information and a Protective Order for Privileged Information was issued to counsel or professionals representing participants in the panel review at issue, each member of the extraordinary challenge committee shall submit an application for a Protective Order for Privileged Information to the United States section of the Secretariat for filing with the Department.

(5) *Counsel or a professional under the direction or control of counsel.* If the panel decides, in accordance with the Article 1904 Rules, that disclosure of a document containing privileged information is appropriate, a counsel or a professional under the direction or control of counsel identified in such a decision as entitled to release of information under a Protective Order for Privileged Information shall submit an application for a Protective Order for Privileged Information. Any such person shall:

(i) File the completed original and five copies of an application with the United States section of the Secretariat which, in turn, shall submit the original and one copy of the application to the Department; and

(ii) As soon as the deadline fixed under the Article 1904 Panel Rules for filing a Notice of Appearance in the panel review has passed, shall serve a copy of the application on each participant, other than the investigating authority, in accordance with paragraphs (b)(4) (ii) and (iii) of this section.

(6) *Other designated persons.* If the panel decides, in accordance with the Article 1904 Panel Rules, that disclosure of a document containing privileged information is appropriate, any person identified in such a decision as entitled to release of information under a Protective Order for Privileged Information, *e.g.*, a Secretary, Secretariat staff, court reporters, interpreters and translators, or a member of the staff of a panelist or extraordinary challenge committee member, shall submit an application for release under Protective Order for Privileged Information to the United States section of the Secretariat for filing with the Department.

(b) *Contents of applications for release under protective order for privileged information.* (1) The Department has adopted application forms for disclosure of privileged information which are available from the United States section of the Secretariat and the Central Records Unit, room B–099, U.S. Department of Commerce, 14th and Constitution Avenue NW., Washington, DC 20230. These forms may be amended from time to time.

(2) Such forms require the applicant for release of privileged information under Protective Order for Privileged Information to submit a personal sworn statement stating, in addition to such other conditions as the Department may require, that the applicant shall:

(i) Not disclose any privileged information obtained under protective order to any person other than:

(A) An official of the Department involved in the particular panel review in which the privileged information is part of the record;

(B) A person who has furnished a similar application and who has been issued a Protective Order for Privileged Information concerning the privileged information at issue; and

(C) A person retained or employed by counsel, a professional, a panelist or extraordinary challenge committee member who has been issued a Protective Order for Privileged Information, such as a paralegal, law clerk, or secretary, if such person has agreed to be bound by the terms set forth in the application for Protective Order for Privileged Information of the counsel, professional, panelist or extraordinary challenge committee member by signing and dating the completed application at the location indicated in such application;

(ii) Use such information solely for purposes of the proceedings under Article 1904 of the Agreement;

(iii) Upon completion of the panel review, or at such earlier date as may be determined by the Department, return to the Department or certify to the

Department the destruction of all documents released under the Protective Order for Privileged Information and all other documents containing the privileged information (such as briefs, notes, or charts based on any such information received under the Protective Order for Privileged Information); and

(iv) Acknowledge that breach thereof may subject the signatory to sanctions under §§ 356.12 and 356.30.

(c) *Issuance of protective orders for privileged information.*—(1) *Panelists, designated government officials and members of an extraordinary challenge committee.* (i) Upon receipt of an application for protective order under this section from a panelist, designated government official or member of an extraordinary challenge committee, the Department shall issue a Protective Order for Privileged Information. The Department shall transmit the original and four copies of the protective order to the United States section of the Secretariat which, in turn, shall transmit the original to the applicant and serve one copy of the order on each participant, other than the investigating authority, in accordance with §§ 356.10(b)(4) (ii) and (iii).

(ii) If the Department issues a Protective Order for Privileged Information to a member of a binational panel or extraordinary challenge proceeding initiated under the United States-Canada Free Trade Agreement, that person must countersign the protective order and return one copy of the countersigned protective order to the United States section of the Secretariat.

(2) *Counsel or a professional under the direction or control of counsel.* Upon receipt of an application for protective order under this section from a counsel or a professional under the direction or control of counsel, the Department shall issue a Protective Order for Privileged Information. If the Department issues a protective order to such person, that person shall immediately file four copies of the protective order with the United States section of the Secretariat and shall serve one copy of the order on each participant, other than the investigating authority, in accordance with §§ 356.10(b)(4) (ii) and (iii).

(3) *Other designated persons described paragraph (a)(6) of this section.* Upon receipt of an application for protective order under this section from a designated person described in paragraph (a)(6) of this section, the Department shall issue a Protective Order for Privileged Information. The Department shall transmit the original and four copies of the protective order to the United States section of the Secretariat.

(d) *Modification or revocation of protective order for privileged information.*—(1) *Notification.* If any person believes that changed conditions of fact or law, or the public interest, may require that a Protective Order for Privileged Information be modified or revoked, in whole or in part, such person may notify the Department in writing. The notification shall state the changes desired and the changed circumstances warranting such action and shall include materials and argument in support thereof. Such notification shall be served by the person submitting it upon the person to whom the Protective Order for Privileged Information was issued. Responses to the notification may be filed within 20 days after the notification is filed unless the Department indicates otherwise. The Department may also consider such action on its own initiative.

(2) *Issuance of modification or revocation.* If the Department modifies or revokes a Protective Order for Privileged Information pursuant to paragraph (d) of this section, the Department shall transmit the original and four copies of the modification or Notice of Revocation to the United States section of the Secretariat which, in turn, shall transmit the original to the person to whom the protective order was issued and serve one copy on each participant, other than the investigating authority, in accordance with §§ 356.10(b)(4) (ii) and (iii).

Subpart D—Violation of a Protective Order or a Disclosure Undertaking

§ 356.12 Sanctions for violation of a protective order or disclosure undertaking.

(a) A person, other than a person exempted from this part by the provisions of section 777f(f)(4) of the Act (19 U.S.C. 1677f(f)(4)), determined under this part to have violated a protective order or a disclosure undertaking may be subjected to any or all or the following sanctions:

(1) Liable to the United States for a civil penalty not to exceed $100,000 for each violation;

(2) Barred from appearing before the Department to represent another for a designated time period from the date of publication in an official publication of a notice that a violation has been determined to exist;

(3) Denied access to proprietary information for a designated time period from the date of publication in an official publication of a notice that a violation has been determined to exist;

(4) Other appropriate administrative sanctions, including striking from the record of the panel review any information or argument submitted by, or on behalf of, the violating party or the party represented by the violating party; terminating any proceeding then in progress; or revoking any order then in effect; and

(5) Required to return material previously provided by the investigating authority, and all other materials containing the proprietary information, such as briefs, notes, or charts based on any such information received under a protective order or a disclosure undertaking.

(b) (1) The firm of which a person determined to have violated a protective order or a disclosure undertaking is a partner, associate, or employee; any partner, associate, employer, or employee of such person; and any person represented by such person may be barred from appearing before the Department for a designated time period from the date of publication in an official publication of notice that a violation has been determined to exist or may be subjected to the sanctions set forth in paragraph (a) of this section, as appropriate.

(2) Each person against whom sanctions are proposed under paragraph (b)(1) of this section is entitled to all the administrative rights set forth in this subpart separately and apart from rights provided to a person subject to sanctions under paragraph (a) of this section, including the right to a charging letter, right to representation, and right to a hearing, but subject to joinder or consolidation by the administrative law judge under § 356.23(b).

§ 356.13 Suspension of rules.

Upon request by the Deputy Under Secretary, a charged or affected party, or the APO Sanctions Board, the administrative law judge may modify or waive any rule in this subpart upon determining that no party will be unduly prejudiced and the ends of justice will thereby be served and upon notice to all parties.

§ 356.14 Report of violation and investigation.

(a) An employee of the Department or any other person who has information indicating that the terms of a protective order or a disclosure undertaking have been violated will provide the information to a Director or the Chief Counsel.

(b) Upon receiving information which indicates that a person may have

violated the terms of a protective order or an undertaking, the Director will conduct an investigation concerning whether there was a violation of a protective order or a disclosure undertaking, and who was responsible for the violation, if any. For purposes of this subpart, the Director will be supervised by the Deputy Under Secretary with guidance from the Chief Counsel. The Director will conduct an investigation only if the information is received within 30 days after the alleged violation occurred or, as determined by the Director, could have been discovered through the exercise of reasonable and ordinary care.

(c) The Director will provide a report of the investigation to the Deputy Under Secretary, after review by the Chief Counsel, no later than 180 days after receiving information concerning a violation. Upon the Director's request, and if extraordinary circumstances exist, the Deputy Under Secretary may grant the Director up to an additional 180 days to conduct the investigation and submit the report.

(d) The following examples of actions that constitute violations of an administrative protective order shall serve as guidelines to each person subject to a protective order. These examples do not represent an exhaustive list. Evidence that one of the acts described in the guidelines has been committed, however, shall be considered by the Director as reasonable cause to believe a person has violated a protective order within the meaning of § 356.15.

(1) Disclosure of proprietary information to any person not granted access to that information by protective order, including an official of the Department or member of the Secretariat staff not directly involved with the panel review pursuant to which the proprietary information was released, an employee of any other United States, foreign government or international agency, or a member of the United States Congress, the Canadian Parliament, or the Mexican Congress.

(2) Failure to follow the detailed procedures outlined in the protective order for safeguarding proprietary information, including maintaining a log showing when each proprietary document is used, and by whom, and requiring all employees who obtain access to proprietary information (under the terms of a protective order granted their employer) to sign and date a copy of that protective order.

(3) Loss of proprietary information.

(4) Failure to return or destroy all copies of the original documents and all notes, memoranda, and submissions containing proprietary information at the close of the proceeding for which the data were obtained by burning or shredding of the documents or by erasing electronic memory, computer disk, or tape memory, as set forth in the protective order.

(5) Failure to delete proprietary information from the public version of a brief or other correspondence filed with the Secretariat.

(6) Disclosure of proprietary information during a public hearing.

(e) Each day of a continuing violation shall constitute a separate violation.

§ 356.15 Initiation of proceedings.

(a) If the Deputy Under Secretary concludes, after an investigation and report by the Director under § 356.14(c) and consultation with the Chief Counsel, that there is reasonable cause to believe that a person has violated a protective order or a disclosure undertaking and that sanctions are appropriate for the violation, the Deputy Under Secretary will, at the Deputy Under Secretary's discretion, either initiate a proceeding under this subpart by issuing a charging letter as set forth in § 356.16 or request that the authorized agency of the involved FTA country initiate a proceeding by issuing a request to charge as set forth in § 356.17. In determining whether sanctions are appropriate and, if so, what sanctions to impose, the Deputy Under Secretary will consider the nature of the violation, the resulting harm, and other relevant circumstances of the case. The Deputy Under Secretary will decide whether to initiate a proceeding no later than 60 days after receiving a report of the investigation.

(b) If the Department receives a request to charge from an authorized agency of a FTA country, the Deputy Under Secretary will promptly initiate proceedings under this part by issuing a charging letter as set forth in § 356.16.

§ 356.16 Charging letter.

(a) *Contents of letter.* The Deputy Under Secretary will initiate proceedings by issuing a charging letter to each charged party and affected party which includes:

(1) A statement of the allegation that a protective order or a disclosure undertaking has been violated and the basis thereof;

(2) A statement of the proposed sanctions;

(3) A statement that the charged or affected party is entitled to review the documents or other physical evidence upon which the charge is based and the method for requesting access to, or copies of, such documents;

(4) A statement that the charged or affected party is entitled to a hearing before an administrative law judge if requested within 30 days of the date of service of the charging letter and the procedure for requesting a hearing, including the name, address, and telephone number of the person to contact if there are further questions;

(5) A statement that the charged or affected party has a right, if a hearing is not requested, to submit documentary evidence to the Deputy Under Secretary and an explanation of the method for submitting evidence and the date by which it must be received; and

(6) A statement that the charged or affected party has a right to retain counsel at the party's own expense for purposes of representation.

(b) *Settlement and amendment of the charging letter.* The Deputy Under Secretary may amend, supplement, or withdraw the charging letter at any time with the approval of an administrative law judge if the interests of justice would thereby be served. If a hearing has not been requested, the Deputy Under Secretary will ask the Under Secretary to appoint an administrative law judge to make this determination. If a charging letter is withdrawn after a request for a hearing, the administrative law judge will determine whether the withdrawal will bar the Deputy Under Secretary from seeking sanctions at a later date for the same alleged violation. If there has been no request for a hearing, or if supporting information has not been submitted under § 356.28, the withdrawal will not bar future actions on the same alleged violation. The Deputy Under Secretary and a charged or affected party may settle a charge brought under this Subpart by mutual agreement at any time after service of the charging letter; approval of the administrative law judge or the APO Sanctions Board is not necessary.

(c) *Service of charging letter on a resident of the United States.* (1) Service of a charging letter on a United States resident will be made by:

(i) Mailing a copy by registered or certified mail addressed to the charged or affected party at the party's last known address;

(ii) Leaving a copy with the charged or affected party or with an officer, a managing or general agent, or any other agent authorized by appointment or by law to receive service for the party; or

(iii) Leaving a copy with a person of suitable age and discretion who resides at the party's last known dwelling.

(2) Service made in the manner described in paragraph (c)(1) (ii) or (iii) of this section shall be evidenced by a certificate of service signed by the

person making such service, stating the method of service and the identity of the person with whom the charging letter was left.

(d) *Service of charging letter on a non-resident.* If applicable laws or intergovernmental agreements or understandings make the methods of service set forth in paragraph (c) of this section inappropriate or ineffective, service of the charging letter on a person who is not a resident of the United States may be made by any method that is permitted by the country in which the person resides and that, in the opinion of the Deputy Under Secretary, satisfies due process requirements under United States law with respect to notice in administrative proceedings.

§ 356.17 Request to charge.

Upon deciding to initiate a proceeding pursuant to § 356.15, the Deputy Under Secretary will request the authorized agency of the involved FTA country to initiate a proceeding for imposing sanctions for violation of a protective order or a disclosure undertaking by issuing a letter of request to charge that includes a statement of the allegation that a protective order or a disclosure undertaking has been violated and the basis thereof.

§ 356.18 Interim sanctions.

(a) If the Deputy Under Secretary concludes, after issuing a charging letter under § 356.16 and before a final decision is rendered, that interim sanctions are necessary to protect the interests of the Department, an authorized agency of the involved FTA country, or others, including the protection of proprietary information, the Deputy Under Secretary may petition an administrative law judge to impose such sanctions.

(b) The administrative law judge may impose interim sanctions against a person upon determining that:

(1) There is probable cause to believe that there was a violation of a protective order or a disclosure undertaking and the Department is likely to prevail in obtaining sanctions under this subpart;

(2) The Department, authorized agency of the involved FTA country, or others are likely to suffer irreparable harm if the interim sanctions are not imposed; and

(3) The interim sanctions are a reasonable means for protecting the rights of the Department, authorized agency of the involved FTA country, or others while preserving to the greatest extent possible the rights of the person against whom the interim sanctions are proposed

(c) Interim sanctions which may be imposed include any sanctions that are necessary to protect the rights of the Department, authorized agency of the involved FTA country, or others, including, but not limited to:

(1) Denying a person further access to proprietary information;

(2) Barring a person from representing another person before the Department;

(3) Barring a person from appearing before the Department; and

(4) Requiring the person to return material previously provided by the Department or the investigating authority of the involved FTA country, and all other materials containing the proprietary information, such as briefs, notes, or charts based on any such information received under a protective order or disclosure undertaking.

(d) The Deputy Under Secretary will notify the person against whom interim sanctions are sought of the request for interim sanctions and provide to that person the material submitted to the administrative law judge to support the request. The notice will include a reference to the procedures of this section.

(e) A person against whom interim sanctions are proposed has a right to oppose the request through submission of material to the administrative law judge. The administrative law judge has discretion to permit oral presentations and to allow further submissions.

(f) The administrative law judge will notify the parties of the decision on interim sanctions and the basis therefor within five days of the conclusion of oral presentations or the date of final written submissions.

(g) If interim sanctions have been imposed, the investigation and any proceedings under this Subpart will be conducted on an expedited basis.

(h) An order imposing interim sanctions may be revoked at any time by the administrative law judge and expires automatically upon the issuance of a final order.

(i) The administrative law judge may reconsider imposition of interim sanctions on the basis of new and material evidence or other good cause shown. The Deputy Under Secretary or a person against whom interim sanctions have been imposed may appeal a decision on interim sanctions to the APO Sanctions Board, if such an appeal is certified by the administrative law judge as necessary to prevent undue harm to the Department or authorized agency of the involved FTA country, a person against whom interim sanctions have been imposed or others, or is otherwise in the interests of justice. Interim sanctions which have been imposed remain in effect while an appeal is pending, unless the administrative law judge determines otherwise.

(j) The Deputy Under Secretary may request an administrative law judge to impose emergency interim sanctions to preserve the status quo. Emergency interim sanctions may last no longer than 48 hours, excluding weekends and holidays. The person against whom such emergency interim sanctions are proposed need not be given prior notice or an opportunity to oppose the request for sanctions. The administrative law judge may impose emergency interim sanctions upon determining that the Department or authorized agency of the involved FTA country is, or others are, likely to suffer irreparable harm if such sanctions are not imposed and that the interests of justice would thereby be served. The administrative law judge will promptly notify a person against whom emergency sanctions have been imposed of the sanctions and their duration.

(k) If a hearing has not been requested, the Deputy Under Secretary will request that the Under Secretary appoint an administrative law judge for making determinations under this section.

(l) The Deputy Under Secretary will notify the Secretariat concerning the imposition or revocation of interim sanctions or emergency interim sanctions.

§ 356.19 Request for a hearing.

(a) Any party may request a hearing by submitting a written request to the Under Secretary within 30 days after the date of service of the charging letter. However, the Deputy Under Secretary may request a hearing only if the interests of justice would thereby be served.

(b) Upon timely receipt of a request for a hearing, the Under Secretary will appoint an administrative law judge to conduct the hearing and render an initial decision.

§ 356.20 Discovery.

(a) *Voluntary discovery.* All parties are encouraged to engage in voluntary discovery procedures regarding any matter, not privileged, which is relevant to the subject matter of the pending sanctions proceeding.

(b) *Limitations on discovery.* The administrative law judge shall place such limits upon the kind or amount of discovery to be had or the period of time during which discovery may be carried out as shall be consistent with the time limitations set forth in this Part.

(c) *Interrogatories and requests for admissions or production of documents.* A party may serve on any other party interrogatories, requests for admissions, or requests for production of documents for inspection and copying, and the party may then apply to the administrative law judge for such enforcement or protective order as that party deems warranted concerning such discovery. The party will serve a discovery request at least 20 days before the scheduled date of a hearing, if a hearing has been requested and scheduled, unless the administrative law judge specifies a shorter time period. Copies of interrogatories, requests for admissions, and requests for production of documents and responses thereto will be served on all parties. Matters of fact or law of which admission is requested will be deemed admitted unless, within a period designated in the request (at least 10 days after the date of service of the request, or within such further time as the administrative law judge may allow), the party to whom the request is directed serves upon the requesting party a sworn statement either admitting or denying specifically the matters of which admission is requested or setting forth in detail the reasons why the party cannot truthfully either admit or deny such matters.

(d) *Depositions.* Upon application of a party and for good cause shown, the administrative law judge may order the taking of the testimony of any person who is a party, or under the control or authority of a party, by deposition and the production of specified documents or materials by the person at the deposition. The application shall state the purpose of the deposition and shall set forth the facts sought to be established through the deposition.

(e) *Supplementation of responses.* A party who has responded to a request for discovery with a response that was complete when made is under no duty to supplement the party's response to include information thereafter acquired, except as follows:

(1) A party is under a duty to seasonably supplement the party's response with respect to any question directly addressed to:

(i) The identity and location of persons having knowledge of discoverable matters; and

(ii) The identity of each person expected to be called as an expert witness at a hearing, the subject matter on which the witness is expected to testify, and the substance of the testimony.

(2) A party is under a duty to seasonably amend a prior response if the party obtains information upon the basis of which the party:

(i) Knows the response was incorrect when made; or

(ii) Knows that the response, though correct when made, is no longer true, and the circumstances are such that a failure to amend the response is in substance a knowing concealment.

(3) A duty to supplement responses may be imposed by order of the administrative law judge, agreement of the parties, or at any time prior to a hearing through new requests for supplementation of prior responses.

(f) *Enforcement.* The administrative law judge may order a party to answer designated questions, to produce specified documents or items, or to take any other action in response to a proper discovery request. If a party does not comply with such an order, the administrative law judge may make any determination or enter any order in the proceedings as the administrative law judge deems reasonable and appropriate. The administrative law judge may strike related charges or defenses in whole or in part, or may take particular facts relating to the discovery request to which the party failed or refused to respond as being established for purpose of the proceeding in accordance with the contentions of the party seeking discovery. In issuing a discovery order, the administrative law judge will consider the necessity to protect proprietary information and will not order the release of information in circumstances where it is reasonable to conclude that such release will lead to unauthorized dissemination of such information.

§ 356.21 Subpoenas.

(a) *Application for issuance of a subpoena.* An application for issuance of a subpoena requiring a person to appear and depose or testify at the taking of a deposition or at a hearing shall be made to the administrative law judge. An application for issuance of a subpoena requiring a person to appear and depose or testify and to produce specified documents, papers, books, or other physical exhibits at the taking of a deposition, at a prehearing conference, at a hearing, or under any other circumstances, shall be made in writing to the administrative law judge and shall specify the material to be produced as precisely as possible, showing the general relevancy of the material and the reasonableness of the scope of the subpoena.

(b) *Use of subpoena for discovery.* Subpoenas may be used by any party for purposes of discovery or for obtaining documents, papers, books, or other physical exhibits for use in evidence, or for both purposes. When used for discovery purposes, a subpoena may require a person to produce and permit the inspection and copying of nonprivileged documents, papers, books, or other physical exhibits which constitute or contain evidence relevant to the subject matter involved and which are in the possession, custody, or control of such person.

(c) *Application for subpoenas for nonparty department records or personnel or for records or personnel of other Government agencies.* (1) An application for issuance of a subpoena requiring the production of nonparty documents, papers, books, physical exhibits, or other material in the records of the Department, or requiring the appearance of an official or employee of the Department, or requiring the production of records or personnel of other Government agencies shall specify as precisely as possible the material to be produced, the nature of the information to be disclosed, or the expected testimony of the official or employee, and shall contain a statement showing the general relevancy of the material, information, or testimony and the reasonableness of the scope of the application, together with a showing that such material, information, or testimony or their substantial equivalent could not be obtained without undue hardship by alternative means.

(2) Such applications shall be ruled upon by the administrative law judge. To the extent that the motion is granted, the administrative law judge shall provide such terms and conditions for the production of the material, the disclosure of the information, or the appearance of the official or employee as may appear necessary and appropriate for the protection of the public interest.

(3) No application for a subpoena for production of documents grounded upon the Freedom of Information Act (5 U.S.C. 552) shall be entertained by the administrative law judge.

(d) *Motion to limit or quash.* Any motion to limit or quash a subpoena shall be filed within 10 days after service thereof, or within such other time as the administrative law judge may allow.

(e) *Ex parte rulings on applications for subpoenas.* Applications for the issuance of subpoenas pursuant to this section may be made *ex parte*, and, if so made, such applications and rulings thereon shall remain *ex parte* unless otherwise ordered by the administrative law judge.

(f) *Role of the Under Secretary.* If a hearing has not been requested, the party seeking enforcement will ask the Under Secretary to appoint an administrative law judge to rule on applications for issuance of a subpoena under this section.

§ 356.22 Prehearing conference.

(a)(1) If an administrative hearing has been requested, the administrative law judge will direct the parties to attend a prehearing conference to consider:

(i) Simplification of issues;

(ii) Obtaining stipulations of fact and of documents to avoid unnecessary proof;

(iii) Settlement of the matter;

(iv) Discovery; and

(v) Such other matters as may expedite the disposition of the proceedings.

(2) Any relevant and significant stipulations or admissions will be incorporated into the initial decision.

(b) If a prehearing conference is impractical, the administrative law judge will direct the parties to correspond with each other or to confer by telephone or otherwise to achieve the purposes of such a conference.

§ 356.23 Hearing.

(a) *Scheduling of hearing.* The administrative law judge will schedule the hearing at a reasonable time, date, and place, which will be in Washington, DC, unless the administrative law judge determines otherwise based upon good cause shown, that another location would better serve the interests of justice. In setting the date, the administrative law judge will give due regard to the need for the parties adequately to prepare for the hearing and the importance of expeditiously resolving the matter.

(b) *Joinder or consolidation.* The administrative law judge may order joinder or consolidation if sanctions are proposed against more than one party or if violations of more than one protective order or disclosure undertaking are alleged if to do so would expedite processing of the cases and not adversely affect the interests of the parties.

(c) *Hearing procedures.* Hearings will be conducted in a fair and impartial manner by the administrative law judge, who may limit attendance at any hearing or portion thereof if necessary or advisable in order to protect proprietary information from improper disclosure. The rules of evidence prevailing in courts of law shall not apply, and all evidentiary material the administrative law judge determines to be relevant and material to the proceeding and not unduly repetitious may be received into evidence and given appropriate weight. The administrative law judge may make such orders and determinations regarding the admissibility of evidence, conduct of examination and cross-examination, and similar matters as are necessary or appropriate to ensure orderliness in the proceedings. The administrative law judge will ensure that a record of the hearing will be taken by reporter or by electronic recording, and will order such part of the record to be sealed as is necessary to protect proprietary information.

(d) *Rights of parties.* At a hearing each party shall have the right to:

(1) Introduce and examine witnesses and submit physical evidence;

(2) Confront and cross-examine adverse witnesses;

(3) Present oral argument; and

(4) Receive a transcript or recording of the proceedings, upon request, subject to the administrative law judge's orders regarding sealing the record.

(e) *Representation.* Each charged or affected party has a right to represent himself or herself or to retain private counsel for that purpose. The Chief Counsel will represent the Department, unless the General Counsel of the Department determines otherwise. The administrative law judge may disallow a representative if such representation constitutes a conflict of interest or is otherwise not in the interests of justice and may debar a representative for contumacious conduct relating to the proceedings.

(f) *Ex parte communications.* The parties and their representatives may not make any *ex parte* communications to the administrative law judge concerning the merits of the allegations or any matters at issue, except as provided in § 356.18(j) regarding emergency interim sanctions.

§ 356.24 Proceeding without a hearing.

If no party has requested a hearing, the Deputy Under Secretary, within 40 days after the date of service of a charging letter, will submit for inclusion into the record and provide each charged or affected party information supporting the allegations in the charging letter. Each charged or affected party has the right to file a written response to the information and supporting documentation within 30 days after the date of service of the information provided by the Deputy Under Secretary unless the Deputy Under Secretary alters the time period for good cause. The Deputy Under Secretary may allow the parties to submit further information and argument.

§ 356.25 Witnesses.

Witnesses summoned before the Department shall be paid the same fees and mileage that are paid witnesses in the courts of the United States.

§ 356.26 Initial decision.

(a) *Initial decision.* The administrative law judge, if a hearing was requested, or the Deputy Under Secretary will submit an initial decision to the APO Sanctions Board, providing copies to the parties. The administrative law judge or the Deputy Under Secretary will ordinarily issue the decision within 20 days of the conclusion of the hearing, if one was held, or within 15 days of the date of service of final written submissions. The initial decision will be based solely on evidence received into the record and the pleadings of the parties.

(b) *Findings and conclusions.* The initial decision will state findings and conclusions as to whether a person has violated a protective order or a disclosure undertaking; the basis for those findings and conclusions; and whether the sanctions proposed in the charging letter, or lesser included sanctions, should be imposed against the charged or affected party. The administrative law judge or the Deputy Under Secretary may impose sanctions only upon determining that the preponderance of the evidence supports a finding of violation of a protective order or a disclosure undertaking and that the sanctions are warranted against the charged or affected party.

(c) *Finality of decision.* If the APO Sanctions Board has not issued a decision on the matter within 60 days after issuance of the initial decision, the initial decision becomes the final decision of the Department.

§ 356.27 Final decision.

(a) *APO Sanctions Board.* Upon request of a party, the initial decision will be reviewed by the members of the APO Sanctions Board. The Board consists of the Under Secretary for International Trade, who shall serve as Chairperson, the Under Secretary for Economic Affairs, and the General Counsel.

(b) *Comments on initial decision.* Within 30 days after issuance of the initial decision, a party may submit written comments to the APO Sanctions Board on the initial decision, which the Board will consider when reviewing the initial decision. The parties have no right to an oral presentation, although the Board may allow oral argument in its discretion.

(c) *Final decision by the APO Sanctions Board.* Within 60 days but not sooner than 30 days after issuance of an initial decision, the APO Sanctions Board may issue a final decision which adopts the initial decision in its entirety; differs in whole or in part from the initial decision, including the imposition of lesser included sanctions; or remands the matter to the administrative law judge or the Deputy Under Secretary for further consideration. The only sanctions that the Board can impose are those sanctions proposed in the charging letter or lesser included sanctions.

(d) *Content's of final decision.* If the final decision of the APO Sanctions Board does not remand the matter and differs from the initial decision, it will state findings and conclusions which differ from the initial decision, if any, the basis for those findings and conclusions, and the sanctions which are to be imposed, to the extent they differ from the sanctions in the initial decision.

(e) *Public notice of sanctions.* If the final decision is that there has been a violation of a protective order or a disclosure undertaking and that sanctions are to be imposed, notice of the decision will be published in the **Federal Register** and forwarded to the United States section of the Secretariat. Such publication will be no sooner than 30 days after issuance of a final decision or after a motion to reconsider has been denied, if such a motion was filed. If the final decision is made in a proceeding based upon a request to charge by an authorized agency of an FTA country, the decision will be forwarded to the Secretariat of the involved FTA country for transmittal to the authorized agency of the FTA country for publication in the official publication or other appropriate action. The Deputy Under Secretary will also provide such information to the ethics panel or other disciplinary body of the appropriate bar associations or other professional associations whenever the Deputy Under Secretary subjects a charged or affected party to a sanction under § 356.12(a)(2) and to any Federal agency likely to have an interest in the matter and will cooperate in any disciplinary actions by any association or agency.

§ 356.28 Reconsideration.

Any party may file a motion for reconsideration with the APO Sanctions Board. The party must state with particularity the grounds for the motion, including any facts or points of law which the party claims the APO Sanctions Board has overlooked or misapplied. The party may file the motion within 30 days of the issuance of the final decision or the adoption of the initial decision as the final decision, except that if the motion is based on the discovery of new and material evidence which was not known, and could not reasonably have been discovered through due diligence prior to the close of the record, the party shall file the motion within 15 days of the discovery of the new and material evidence. The party shall provide a copy of the motion to all other parties. Opposing parties may file a response within 30 days of the date of service of the motion. The response shall be considered as part of the record. The parties have no right to an oral presentation on a motion for reconsideration, but the Board may permit oral argument at its discretion. If the motion to reconsider is granted, the Board will review the record and affirm, modify, or reverse the original decision or remand the matter for further consideration to an administrative law judge or the Deputy Under Secretary, as warranted.

§ 356.29 Confidentiality.

(a) All proceedings involving allegations of a violation of a protective order or a disclosure undertaking shall be kept confidential until such time as the Department makes a final decision under these regulations, which is no longer subject to reconsideration, imposing a sanction.

(b) The charged party or counsel for the charged party will be, to the extent possible, granted access to proprietary information in these proceedings, as necessary, under administrative protective order, consistent with the provisions of § 356.10.

§ 356.30 Sanctions for violations of a protective order for privileged information.

The provisions of this subpart shall apply to persons who are alleged to have violated a Protective Order for Privileged Information.

Dated: December 28, 1993.

Jeffrey E. Garten,

Under Secretary for International Trade.

[FR Doc. 93–32063 Filed 12–30–93; 8:45 am]

BILLING CODE 3510–DS–P

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LIST OF PUBLIC LAWS

Note: The list of Public Laws for the first session of the 103d Congress has been completed and will resume when bills are enacted into law during the second session of the 103d Congress, which convenes on January 25, 1994.

A cumulative list of Public Laws for the first session of the 103d Congress is in Part IV of this issue of the **Federal Register**.

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[1] Because Title 3 is an annual compilation, this volume and all previous volumes should be retained as a permanent reference source.

[2] The July 1, 1985 edition of 32 CFR Parts 1–189 contains a note only for Parts 1–39 inclusive. For the full text of the Defense Acquisition Regulations in Parts 1–39, consult the three CFR volumes issued as of July 1, 1984, containing those parts.

[3] The July 1, 1985 edition of 41 CFR Chapters 1–100 contains a note only for Chapters 1 to 49 inclusive. For the full text of procurement regulations in Chapters 1 to 49, consult the eleven CFR volumes issued as of July 1, 1984 containing those chapters.

[4] No amendments to this volume were promulgated during the period Apr. 1, 1990 to Mar. 31, 1993. The CFR volume issued April 1, 1990, should be retained.

[5] No amendments to this volume were promulgated during the period Apr. 1, 1991 to Mar. 31, 1993. The CFR volume issued April 1, 1991, should be retained.

[6] No amendments to this volume were promulgated during the period July 1, 1991 to June 30, 1993. The CFR volume issued July 1, 1991, should be retained.

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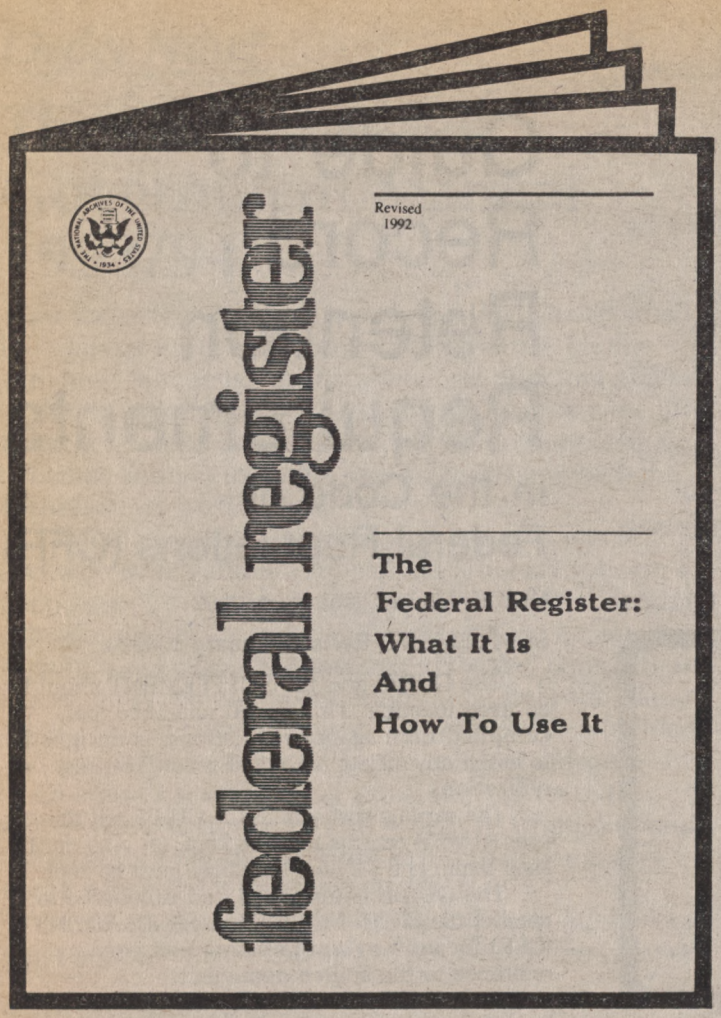

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