FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 0, 4 and 63

[ET Docket No. 04–35; FCC 04–188]

Disruptions to Communications

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document extends the Commission's disruption reporting requirements to communications providers who are not wireline carriers. The Commission also streamlines compliance with the reporting requirements through electronic filing with a ''fill in the blank'' template and by simplifying the application of that rule. In addition, the Commission delegates authority to the Chief, Office of Engineering and Technology, to make the revisions to the filing system and template necessary to improve the efficiency of reporting and to reduce, where reasonably possible, the time for providers to prepare, and for the Commission staff to review, the communications disruption reports required to be filed. These actions will allow the Commission to obtain the necessary information regarding service disruptions in an efficient and expeditious manner and to achieve significant concomitant public interest benefits.

DATES: Effective January 3, 2005 except for Part 4 and the amendments to § 63.100, which contains information collection requirements that have not been approved by the Office of Management and Budget. The Federal Communications Commission will publish a document in the **Federal Register** announcing the effective date. Written comments by the public on the modified information collection requirements must be submitted on or before January 3, 2005. Written comments must be submitted by the Office of Management and Budget on the information collection requirements on or before January 3, 2005.

ADDRESSES: Comments on the information collection requirements should be addressed to the Office of the Secretary, Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554. In addition to filing comments with the Secretary, a copy should be submitted to Leslie Smith, Federal Communications Commission, Room 1–C804, 445 12th Street, SW., Washington, DC 20554, or via Internet to *Leslie.Smith@fcc.gov,* and to Kristy L. LaLonde, OMB Desk Officer, 10234 NEOB, 725 17th Street, NW., Washington, DC 20503 or via the Internet to *Kristy_L._LaLonde@omb.eop.gov.* or via fax at (202) 395–5167.

FOR FURTHER INFORMATION CONTACT: Charles Iseman at (202) 418–2444, *charles.iseman@fcc.gov,* Office of Engineering and Technology, TTY (202) 418–2989.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, portion of the Report and Order and Further Notice of Proposed Rule Making, ET Docket No. 04–35, FCC 04–188, adopted August 4, 2004, and released August 19, 2004. The full text of this document is available for inspection and copying during normal business hours in the FCC Reference Center (Room CY–A257), 445 12th Street, SW., Washington, DC 20554. The complete text of this document also may be purchased from the Commission's copy contractor, Best Copy and Printing, Inc., 445 12th Street, SW., Room, CY–B402, Washington, DC 20554. The full text may also be downloaded at *www.fcc.gov.* Alternate formats are available to persons with disabilities by contacting Brian Millin at (202) 418–7426 or TTY (202) 418–7365.

Final Paperwork Reduction Act of 1995 Analysis

This document contains modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public to comment on the information collection requirements contained in this R&O as required by the Paperwork Reduction Act of 1995, Public Law 104–13. Public and agency comments are due January 3, 2005. In addition, the Commission notes that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, *see* 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might ''further reduce the information collection burden for small business concerns with fewer than 25 employees.''

In this present document, we have assessed the effects of how the modified outage-reporting requirements, which apply to wireline communications providers and to cable communications providers of circuit-switched telephony, and the new outage-reporting requirements, which apply to satellite communications providers, Signaling System 7 (''SS7'') providers, terrestrial wireless communications providers, and affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications, will impose information collection burdens on small business concerns. We anticipate that the revised rule will require the reporting of a few more outages than the approximately 200 outages that were reported annually. Communications providers that are small businesses are likely to have far fewer end users than the large ILECs, which have filed the vast majority of all outage reports in the past. We find it likely that, only on the rarest of occasions, small businesses may be required to file outage reports. Furthermore, it is practically inconceivable that a small business employing 25 or fewer employees will ever be required to file an outage report, because the communications providers to whom the revised rule applies typically require far larger numbers of employees.

Congressional Review Act

The Commission will send a copy of this Report & Order, in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

Summary of Report and Order

1. The Report and Order adopted, with some modifications, the Commission's proposal to extend mandatory outage-reporting requirements to include all communications providers (satellite and wireless providers, in addition to wireline and cable communications providers, which are now covered by the rule) that provide voice and/or paging communications. As proposed, we adopt a common metric that will apply across all communications platforms in determining the general outage-reporting threshold criteria. The common metric is the number of ''user-minutes'' potentially affected by an outage and is defined as the mathematical result of multiplying the outage's duration expressed in minutes and the number of users potentially affected by the outage. For example, a 30-minute outage that potentially affects 30,000 end users also potentially affects 900,000 user-minutes (30 minutes × 30,000 users = 900,000 user-minutes). The general threshold criteria are that an outage must be reported to the Commission if (a) its duration is at least 30 minutes; and (b) it potentially affects at least 900,000 user-minutes. We have applied the common metric and general threshold criteria as a basis for determining specific outage-reporting threshold criteria that account for the

unique technical aspects of each communications platform. In taking these actions, the Commission recognizes that, although these requirements were originally established within the telecommunications common carrier context, it is now appropriate to adapt and apply them more broadly across all communications platforms to the extent discussed in the Report and Order. In an effort to promote rapid reporting and minimal administrative burden on covered entities, the Commission also streamlines compliance with the reporting requirements through electronic filing with a ''fill in the blank'' template and by simplifying the application of the existing rule (47 CFR 63.100).

2. *Extension of Mandatory Reporting Requirements for Communications Providers.* Most commenting parties recognize the need for some form of outage reporting so that the Commission can fulfill its responsibilities in overseeing the reliability and security of our Nation's telecommunications networks. The Department of Homeland Security (''DHS'') undisputedly needs this data to fulfill its responsibilities concerning homeland security. There was, however, a mixed record concerning the manner in which outage data should be collected, with some commenting parties in favor of mandatory outage reporting and others opposed. We find that the mandatory reporting of network outages is the only reliable way to collect this important information for use by this Commission and, where appropriate, for other government entities.

3. In its comments, the Department of Homeland Security states it ''is not opposed to a voluntary reporting structure, provided there is persuasive evidence of *an absolute commitment from all carriers* in the relevant industry segments *to participate fully and to furnish complete and accurate disruption information in a consistent, timely, and thorough manner*.'' There is, however, no evidence in the record that the ''Industry-Led Outage Reporting Initiative'' (''ILORI'') process proposed by the Alliance for Telecommunications Industry Solutions (ATIS) and other commenting parties, or any other voluntary process, would meet the Department's criteria that all relevant communications providers provide an absolute commitment to participate fully in a voluntary reporting structure; nor is there any probative evidence that the participants would, thereafter, furnish complete or accurate service disruption information in a consistent, or timely, or thorough manner.

4. In sum, based on the record before us, we find no persuasive evidence that a voluntary program would be workable. We therefore adopt our proposal to extend mandatory outage reporting to non-wireline communications providers, and we will treat information in all outage reports as confidential information that is exempt from routine public disclosure under Freedom of Information Act (''FOIA''). *See* the Commission's Rules, 47 CFR 0.457, 0.459. We note, however, that the analytical substance of these reports is essential to the development and validation of best practices. As a consequence, we will also use information from those reports in analyses that will enable us to provide guidance to the Network Reliability and Interoperability Council, the Network Reliability Steering Committee and other organizations. We will do so, however, in a way that does not provide sensitive information to those who might use it for hostile, or competitive, purposes. (This may take the form, for example, of providing direct assistance to developers of Best Practices who address sources of outage problems. This would be consistent with previous efforts by our staff who, by analyzing outage reports, were able to provide detailed guidance to the Network Reliability Steering Committee and Network Reliability and Interoperability Councils.)

5. The Department of Homeland Security (''DHS'') requests that it receive outage information directly, so that the Secretary of the Department of Homeland Security and the Department's organizational units can fulfill their responsibilities under the Homeland Security Act of 2002, which granted DHS broad authority to obtain information from federal agencies. *See* 6 U.S.C. 21(d)(4) and (13) providing DHS with ''timely and efficient access * * * to all information necessary to discharge the responsibilities under this section. * * *''); 6 U.S.C. 122(a)(1) (giving DHS access to ''all information concerning infrastructure or other vulnerabilities of the United States to terrorism, whether or not such information has been analyzed, that may be collected, possessed, or prepared by any agency of the Federal Government''); 6 U.S.C. 122(b) (DHS may obtain access to information from agencies ''on regular or routine basis''). In addition, the Commission has an affirmative obligation to ''promptly'' provide DHS with all reports and information relating to threats of terrorism concerning critical infrastructure vulnerability. *See* 6 U.S.C. 122(b)(2). We will, therefore, make available to DHS, in encrypted form and immediately upon receipt, all electronically submitted outage reports. DHS can then undertake to provide information from those reports to such other governmental authorities (such as State Public Utilities Commissions) as it may deem to be appropriate.

Consistent Reporting

6. *A. Common Metric.* We conclude that the reporting threshold should henceforth be based on the number of ''users'' potentially affected by outages instead of the more ambiguous term ''customers,'' which is currently employed in our rules. Most commenting parties agree, in the abstract, that ''users'' would be a less ambiguous metric than ''customers.'' In addition, we are not persuaded by the comments that suggest the use of ''blocked calls'' would be superior to user-minutes as a basis for a threshold reporting criterion, and we adopt the proposed 900,000 user-minutes as a common metric to serve as an outage-reporting threshold. The major weakness of the blocked calls proposal is that it would result in a significant undercount of the number of users potentially affected by any outage. Our focus on the number of potentially affected end users is even more important today, in light of the homeland security concerns raised in the aftermath of the tragic events of September 11, 2001. In short, and more generally, because earthquakes, hurricanes, and terrorist attacks can occur at any time, day or night, we need to ensure that our communications infrastructure is reliable and secure on a ''24–7'' basis. In sum, our proposed 900,000 user-minute threshold could result in the reporting of more outages in rural areas (*e.g.*, if telecommunications in those areas were less reliable); however, the availability of essential telecommunications services are particularly vital in rural areas, given the remote nature and lack of quick access to emergency services and other forms of communications that are more frequently available in urban environments. In this regard, we do not agree with the comments of the Staff of the Kansas Corporation Commission that it is necessary to lower the reporting threshold to 150,000 user-minutes in order to capture rural outage data. And, an increased number of outages affecting large organizational customers could also be reported because the number of potentially affected end users would no longer be under counted. In other words, use of the common metric will result in a more

accurate and realistic assessment of outages on a national basis. We have adopted our proposed 900,000 user-minute as a common metric for determining the general outage-reporting threshold for each communications technological platform addressed in the Report and Order.

7. *B. Simplified Reporting for Special Offices and Facilities and 911 Services.* Based on the record, we conclude that some revisions to our proposed 911/E911 outage-reporting criteria are justified. We have adopted the following threshold criteria for reporting 911/E911 outages for wireline and non-wireline operations:

(1) There is a loss of communications to PSAP(s) potentially affecting at least 900,000 user-minutes and: (a) The failure is neither at the PSAP(s) nor on the premises of the PSAP(s); (b) no reroute for all end users was available; and (c) the outage lasts 30 minutes or more; or

(2) There is a loss of 911 call processing capabilities in one or more E–911 tandems/selective routers for at least 30 minutes duration; or

(3) One or more end-office or MSC switches or host/remote clusters is isolated from 911 service for at least 30 minutes and potentially affects at least 900,000 user-minutes; or

(4) There is a loss of ANI/ALI and/or a failure of location determination equipment, including Phase II equipment, for at least 30 minutes and potentially affecting at least 900,000 user-minutes (provided that the ANI/ALI or the necessary location determination equipment was then currently deployed and in use, and the failure is neither at the PSAP(s) or on the premises of the PSAP(s)).

In taking this action, we have applied the 900,000 user-minute threshold as a substitute for the 30,000 customer threshold proposed by commenting parties in order to maintain consistency with the general threshold that we have adopted. We also adopted BellSouth's suggestion to specify that it is the loss of ''911 call processing capabilities'' in E–911 tandem/selective routers, and not the loss ''all call processing capabilities,'' that is the gist of this reportable event. In addition, we are persuaded by NENA's comments that ANI/ALI (callback and location identification) functionality is a fundamental part of E911 service whose loss should be considered to be a reportable event. ANI/ALI functionality or its loss can make, and has made, the difference between life and death, even in situations in which voice 911 calls were completed. We understand that communications providers will not necessarily know whether the PSAP(s) receive 911/E911 communications. Therefore, the providers' responsibility is to report outages that meet the threshold criteria and that potentially affect their ability to transmit 911/E911 communications to the PSAP(s). We will not hold providers accountable for determining whether their transmissions were in fact received by the PSAP(s). For this reason, we are excluding outages caused by ''failures at the PSAP(s) or on the premises of the PSAP(s).'' We disagree with the contention that some of the threshold criteria should be limited to only those outages that are caused by a failure in the reporting communications provider's network. We find that it is vitally important that we be informed of all significant outages that affect PSAPs, regardless of the network(s) in which the underlying causal factors lie. This information is crucial to gleaning more quickly a fuller understanding of how outages in a network affect other networks. This is especially so where PSAPs are affected, because of their major role in protecting public safety and human lives. We also disagree with the contention that the Commission should defer addressing outage reporting requirements for E911 until the completion of NRIC VII's study of the issue, at the end of 2005. We find that the public's interest in reliable and secure public safety E911 telecommunications is better served by our acting promptly.

8. We are persuaded that our original proposal to include as special facilities all airports, including those small private airports that lack modern air traffic control communications infrastructure, may be overly inclusive. Instead, we shall limit the reporting requirement to those airports that are listed as current primary (PR), commercial service (CM), and reliever (RL) airports in the FAA's National Plan of Integrated Airport Systems (NPIAS) (as issued at least one calendar year prior to the outage) for the following reasons. There are over 19,000 airports in the United States. Most of those airports are civilian landing areas that are not open to the general public. That leaves a total of 5,314 airports open to the public. Of those airports, there is a list of (currently) 3,489 airports listed in the current NPIAS plan as airports that are ''significant to national air transportation.'' These airports are categorized as primary (PR), commercial (CM), reliever (RL), and general aviation (GA). There are currently 422 PR, 124 CM, 260 RL, and 2558 GA airports. Commercial airports are airports that receive scheduled passenger service and enplane at least 2,500 passengers per year. Of the primary airports, 142 are hubs. A hub is a commercial airport that individually enplanes at least .05% of the total U.S. customer volume per year. All hub airports will be covered by our outage reporting requirements. We also find that the primary non-hub airports, which are commercial airports that enplane over 10,000 passengers per year, should be covered by these requirements. Similarly, we are including reliever airports, which are airports that are used as alternatives for congested hubs, as well as providing general aviation service to the surrounding area. In contrast we will exclude at this point general aviation airports, which are the airports that do not receive scheduled commercial service. In sum, 806 airports—the 422 primary airports including all hubs, the 124 commercial service airports, and the 260 reliever airports that are used as alternative airports for congested hubs—will now be covered by the revised outage-reporting requirements for special facilities that we are adopting herein. Although we believe that all communications providers will be able to adapt fairly easily to the inclusion of these airports within the outage-reporting requirements for special offices and facilities, we recognize that in some cases small rural communications providers might not be able to comply with the revised rule. In such cases, we anticipate granting appropriate waivers of this rule to providers that file a written request for waiver of the rule that is supported with clear and convincing evidence of the need for such a waiver.

9. As commenting parties have pointed out, the critical communications infrastructure serving airports is landline based. Therefore, the outage-reporting requirements for special offices and facilities, insofar as they cover communications to airports, will not be applied to satellite and terrestrial wireless communications providers at this time.

10. *C. Elimination of Separate Reporting Requirement for Fires.* A separate reporting requirement, set forth in § 63.100(d), pertains to the reporting of outages caused by fires. Carriers are required to report fire-related incidents that affect 1,000 or more service lines for a period of 30 minutes or more, § 63.100(d). Only a few outages have been reported pursuant to this subsection and these have tended to be very minor outages. In general, major fire outages have met the more general reporting criteria because they exceed the current 30-minute, 30,000-customer

threshold criteria. Such outages would also exceed the proposed 900,000 user-minute threshold criterion. We therefore proposed to eliminate this requirement. Commenting parties unanimously support elimination of this rule for the reasons that we advanced in the *NPRM.* We therefore conclude that the separate reporting requirement for outages caused by fires no longer serves the public interest and rescind that requirement.

11. *D. Simplified Time Calculation for Filing Initial Report.* In the *NPRM,* we had proposed to require the filing of initial outage reports within two hours of the onset of the outage and the filing of final reports within 30 days of the onset of the outage. We are persuaded, however, that the alternative three-step approach proposed by various commenting parties would best provide the information that we need in an efficient and timely manner and would lessen the administrative burden on communications providers. A ''bare-bones'' notification within two hours of the provider's first knowledge of the outage will alert the Commission and DHS that a significant outage might be underway and will also provide some essential initial information (*e.g.*, who to contact if more information were required in order to proceed further) if it is necessary to proceed further. This will not impose any significant burden on the provider's restorative efforts. Efficient, electronic, Web-based filing, using a ''fill-in-the-blank'' template will be the preferred method of notification, but since there cannot be a guarantee that any particular method of communications would be operating normally, other written alternatives (*e.g.*, FAX, courier) would be equally acceptable. The Notification shall include the following items—Reporting Entity, Date, Time, Brief Description of Problem, Services Affected, Geographic Area, Contact Name and Contact Telephone Number. At the three-day (72-hour) mark, the initial report shall be due. The data contained in the initial report will tend to be more complete and accurate than those that are filed at the two-hour mark under our current reporting rule. It may be the case, as PanAmSat and SES Americom suggest, that varying amounts of information will be available at the three-day mark from one outage to another and, thus, that not all data fields in every initial outage report will be able to be completed on time. We understand this but expect that reporting providers will exercise good faith in filling out the initial report as completely as possible. As a result, use of the same template for initial and final reports will enable reporting entities to submit all available information in the initial report and re-use that information in the final report to the extent that it is still accurate. Attestation will be required for the final report only.

12. *E. Other.* In the *NPRM,* we tentatively found that existing requirements for final disruption reports should be modified to include the following information:

- A statement as to whether the reported outage was at least partially caused because the network did not follow engineering standards for full diversity (redundancy) (the deployment and operation of redundant assets (*e.g.*, transmission facilities, network equipment, or logical paths) to achieve survivable communications in the event of a failure. Diversity requirements are specified in applicable industry standards and best practices.); and
- A statement of all of the causes of the outage. Outages may result from the occurrence of several events. The current rule requires that the final report identify the root cause, § 63.100(h)(1). Experience in administering this part of our rules has convinced us that there may be more than one root cause and that, to facilitate analysis, all causes of each outage should be reported.

In addition, as the communications market evolves, we anticipated that communications might increasingly be offered through complex arrangements among communications providers and other entities (which may or may not be affiliated with the provider) that maintain or provide communications networks or services for them. For example, local exchange carriers have long provided Signaling System 7 (''SS7'') communications for their own use as well as for their customers, but some entities have more recently emerged to provide SS7 for such carriers. We proposed to require these entities to comply with any disruption reporting requirements that we may adopt to the same extent as would be required of the communications provider if it were directly providing the voice or data communications or maintaining the system.

13. After reviewing the record in this proceeding, we find that the public interest will be best served by requiring that final outage reports identify whether the outage was at least partially caused because the network did not follow engineering standards for full diversity (redundancy). In an era in which networks are increasingly interconnected and in which there is heightened concerns that a failure of one network could conceivably cause the failure of other, interconnected networks, we find it important to facilitate analysis of the extent to which lack of diversity causes significant network outages. To analyze the text fields of existing outage reports manually for variations from best practices and for lack of diversity would be a very time consuming task. If past outage reports had contained a check box for identifying a lack of diversity, those analyses could have been readily done. In any event, we deem it important to discover if increased diversity would appreciably prevent the occurrences of outages. Therefore, we conclude that the outage template should, as proposed, include a checkbox for diversity. In general, if Best Practices related to diversity are discussed in any of the Best Practice fields or if lack of diversity is listed as a root cause or contributing factor to the outage, then the diversity checkbox must also be checked. In addition, we have been persuaded by those comments that assert that each outage has only a single root cause but may have many contributing factors. Accordingly, reporting entities will be required to reveal in the final outage report the root cause of the outage and several contributing factors (if any) to the outage.

14. Regarding outage reporting by third party entities that maintain or provide communications networks or services for covered communications providers, we adopt our proposal. We point out that equipment manufacturers or vendors that do not maintain or provide such networks or services will not be subject to outage-reporting requirements. As BellSouth cogently observes: ''SS7 outages have the potential to affect large numbers of end users and can have a large impact on the reliability and availability of the public switched telephone network'' and therefore ''it is reasonable to require disruption reporting for SS7 service from all SS7 providers.'' Although, as Syniverse, KCC, and Ericsson observe, third party entities and communications providers should fully cooperate in assembling outage report data and in restoration efforts, we do not deem it advisable to countenance any delay that could result from these coordination efforts or from any emerging contractual disputes among the parties with respect to their service agreements. The outage reporting requirements we have adopted serve not only the general, long-term interests of network reliability and security, and potential resultant improvements in customer service, but also the overarching need to obtain

rapidly and accurately outage data that could serve the vital interests of homeland security. Our proposal better serves those vital interests and we therefore adopt it.

Outage Reporting Requirements for Wireline Communications

15. *A. Voice Telephony.* We use the term ''wireline provider'' to refer to an entity that provides terrestrial communications through direct connectivity, predominantly by wire, coaxial cable, or optical fiber, between the serving central office (as defined in the Appendix-Glossary to 47 CFR part 36) and end user location(s). We proposed to require wireline providers to report outages that meet the following criteria:

- The outage duration must be at least 30 minutes; *and*
- The number of ''user-minutes'' potentially affected must equal or exceed 900,000.

16. For telephony, we proposed to define the number of end users as the number of ''assigned telephone numbers,'' by which we mean the sum of ''assigned numbers'' and ''administrative numbers'' as defined in § 52.15(f)(i) and (iii) of the Commission's Rules, § 52.15(f)(i), (iii). Assigned numbers are defined as ''numbers working in the Public Switched Telephone Network (''PSTN'') under an agreement such as a contract or tariff at the request of specific end users or customers for their use, or numbers not yet working but having a customer service order pending.'' Administrative numbers are ''numbers used by telecommunications carriers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards.'' We tentatively concluded that the combination of these two measurements would provide a better assessment of the number of users that are potentially affected by the communications disruption, as distinguished from the number of ''customers'' that may be potentially affected.

17. After reviewing the record, we agree with a number of commenting parties that our proposed use of assigned telephone numbers as a count of *potentially affected* wireline end users could result in a small over counting, which might unnecessarily increase the number of reports. Hence we have revised our requirement to include assigned telephoned number *or* working telephone numbers, where working telephone numbers refer to telephone numbers that have been assigned and provisioned for service. (To be more specific, ''working telephone numbers'' are defined to be the sum of all telephone numbers that can originate, or terminate telecommunications. As a consequence, this would include, for example, all working telephone numbers on the customer's side of a PBX or Centrex.) Working telephone numbers include direct inward dialing (''DID'') telephone numbers assigned to PBX and Centrex customers. Service providers may be aware of working telephone numbers to support their billing and operations processes and, if so, may use working telephone numbers in place of assigned telephone numbers. If the working telephone numbers are unknown for any reason, assigned telephone numbers must be used.

18. Blocked calls, which were proposed as an alternative by a number of commenting parties, measure the actual impact, not the potential impact, of an outage. Our concern is to identify problem areas in the network by receiving reports on events that, if they had occurred at a different time or on a different day of the week, could have affected many users. We are not interested primarily in a tally of the exact number of users that were affected because we have not, and do not currently intend to rank or rate outage reports based on their actual impact on end users.

19. Furthermore, the use of blocked calls as a reporting criterion would result in a significant undercounting of the number of end users *potentially affected* by outages. We find that the use of ''access lines in service'' or any of the other types of lines mentioned in the comments would suffer from the same flaw primarily because there are no useful definitions on the record for any of those terms. (As a general example, a large PBX or Centrex with many users, working stations, and telephone numbers can be connected to a switch by a relatively small number of lines or trunks. Simply counting these lines or trunks would underestimate the number of potentially-affected end users. In fact, even counting telephone numbers may underestimate the impact, particularly in the case of PBXs for which unique telephone numbers are not assigned to each end user.)

20. We disagree with ATIS's assertions about inaccuracies and ''out-datedness'' of, and difficulties in using, NRUF data. ATIS's claim that the NRUF reports ''do not reflect *working telephone lines''* is not apposite because the Commission's rules, which are also clearly set forth in the NRUF instructions, state that ''assigned numbers are *numbers working* in the Public Switched Telephone Network.'' (§ 52.15 (f)(1)(iii) makes no reference to the number of ''lines.'') In addition, it is not clear what definition of ''working'' ATIS is using in reference to access lines. We emphasize that telephone switches are not designed to enable every telephone number that can be served by a switch to be actually served simultaneously, but every such number is *potentially affected* if the switch fails. Our rules and the NRUF guidelines clearly spell out the five mutually exclusive utilization categories in which telephone numbers are to be counted. These categories cover all of the various problem areas mentioned in the comments.

21. Similarly, ATIS and other's proposed requirement—that a ''survivable element'' must fail in order for an outage to be reportable—fails to account for the fact that end users are potentially affected by outages regardless of whether ''survivable elements'' fail. We take particular exception to the USTA comment that outages should not be required to be reported if ''non-intelligent elements'' are involved regardless of the number of users affected. We stress that our concern is with the communications users, not with the intelligence or lack thereof in various network elements. As ATIS and others state, the adoption of our proposal could result in the filing of more outage reports than have been filed under the existing reporting threshold criteria. We do not believe that the number of such reports will dramatically increase, but the additional data will better enable the Commission to meet its responsibilities to facilitate increased reliability and security of our nation's telecommunications infrastructure.

22. Finally, we reject the assertions that it is difficult and cumbersome for wireline providers to use NRUF data to determine the number of assigned telephone numbers potentially affected by outages. The NRUF data is reported by rate center, and the individual utilization records in each rate center are reported by NPA, NXX, and the thousands digit of the telephone numbers. It is a simple, straight forward process for wireline providers to use the Local Exchange Routing Guide (''LERG'') (which is published by Telcordia and updated monthly) to sum up the utilization of all the numbers served by each switch to determine the total assigned numbers and administrative numbers. We note that none of the smaller carriers or their industry associations that submitted comments in this proceeding has raised any concern regarding their ability to

track assigned and administrative numbers for each switch. All wireline carriers continuously keep track of assigned and administrative numbers so that an incoming call to any of those numbers can be switched to the correct line and trunk, so that they can respond to requests for new service or for specific vanity telephone numbers. As a consequence, we find that our proposal will best serve the public interest and, therefore, has been adopted.

23. *B. IXC and LEC Tandem Outages.* Section 63.100(g) states that, for the tandem facilities of interexchange or local exchange carriers, ''carriers must, if technically possible, use real-time *blocked calls* to determine whether criteria for reporting an outage have been reached. Carriers must report IXC and LEC tandem outages * * * where more than 90,000 calls are blocked during a period of 30 or more minutes for purposes of complying with the 30,000 potentially affected customers threshold.'' § 63.100(g) (emphasis supplied). This subsection further provides that: ''[c]arriers may use historical data to estimate blocked calls when required real-time blocked call counts are not possible. When using historical data, carriers must report incidents * * * where more than 30,000 calls are blocked during a period of 30 or more minutes for purposes of complying with the 30,000 potentially affected customers threshold.'' We proposed to modify this rule to replace the ''customer'' metric with the ''assigned telephone number-minute'' metric, in order to be consistent with the other modifications that we proposed. We also noted that the term ''blocked calls'' is not clearly defined in § 63.100 and that some companies have counted only originating calls that are blocked, while other companies count both originating and terminating blocked calls. To eliminate this ambiguity and permit the Commission to gain an understanding of the full impact of each outage, as well as to promote consistent reporting by all carriers, we proposed to require that all blocked calls, regardless of whether they are in the originating or terminating direction, be counted in determining compliance with the outage reporting threshold criteria.

24. For those outages where the failure prevents the counting of blocked calls in either the originating or terminating direction, or in both directions, historical data may be used. We tentatively concluded that three times the actual number of carried calls for the same day of the week and the same time of day should be used as a surrogate for the number of blocked calls that could not be measured directly. The proposed multiplicand of three is based on the total number of times (three) that an average subscriber would attempt to redial a number after first not being able to complete a telephone call. *In the Matter of Amendment of Part 63 of the Commission's Rules to Provide for Notification by Common Carriers of Service Disruptions,* CC Docket No. 91–273, *Second Report and Order,* 9 FCC Rcd 3911, 3914 at ¶ 14 (1994). We also clarified that ''blocked calls'' are a ''running measurement'' made for the total duration of the outage. That is, an outage that blocks only 50,000 calls in the first 30 minutes may nevertheless reach the 90,000 blocked-call threshold criterion if the outage lasts, for example, for one hour. In relatively rare cases, it may be possible to obtain the number of outgoing blocked calls only, or the number of incoming blocked calls only, but not both. For these cases, we proposed to require that the blocked-call count be doubled to compensate for the missing data, unless the carrier certifies that only one direction of the call set-up was affected by the outage.

25. Based on our review of the record, we believe that there is some confusion about our proposal. Contrary to the comments of several entities, we are not using assigned telephone numbers as the basis for determining if a tandem outage is reportable. Instead, we are using blocked calls. We disagree with commenting parties who object to our proposal to triple the number of historic carried calls to determine if an outage is reportable. We believe that setting the threshold for real-time blocked calls equal to triple the threshold using the number based on measured historic carried calls is still appropriate. This is not a change in the Commission's position. The existing rule, as it always has, states:

> Carriers must report IXC and LEC tandem outages * * * where more than *90,000 calls are blocked* during a period of 30 or more minutes for purposes of complying with the 30,000 potentially affected customers threshold. Carriers may use historical data to estimate blocked calls when required real-time blocked call counts are not possible. *When using historical data,* companies, corporations or entities must report incidents * * * where more than *30,000 calls are blocked* during a period of 30 or more minutes for purposes of complying with the 30,000 potentially affected customers threshold.

Section 63.100(f) of the Commission's Rules, (emphases added). (When referring to historical data, for which 30,000 ''historic carried calls'' is the appropriate criterion, the existing rule inaccurately refers to 30,000 ''calls [that are] blocked.'' This is so, because in the historic period, all calls were presumably carried and none were ''blocked.'') One can logically infer that there are more call attempts when outages occur. This implies that there should be a conversion factor when using real-time information instead of historical information. In the early 1990s, ATIS Committee T1A1.2 used a factor of three in its recommended methodology. This resulted in the existing threshold of 90,000 for real-time blocked calls. If we follow the suggestion of certain commenting parties and eliminate the factor of three, the threshold for real-time blocked calls would be 30,000 blocked calls—the same as the threshold for historical carried calls. We find that this would be an unsupported deviation from the existing rule and would disserve the public interest.

26. We strongly disagree with Sprint's recommendation that we limit the counting of blocked calls to those that occur in the first 30 minutes of an outage. This would result in a severe and unjustified undercount of the effects of outages. Thus, many severe outages would not be reported. Most outage reports that the Commission receives and which have been triggered by blocked calls are the result of cable failures; these outages can persist for hours and even days. Regarding the ''originating'' and ''terminating'' terminology that we have historically applied to blocked calls, we acknowledge that for tandem switches the terms ''incoming'' and ''outgoing'' would serve just as well. Our paramount goal is to ensure that all effects of outages are counted. For outages of tandem switches, all blocked calls need to be counted. Since any call incoming to a tandem switch is also outgoing from that tandem, the number of blocked calls can be counted by determining the number of blocked incoming calls or by determining the number of outgoing blocked calls. That is, there is no need to double either figure or to add them together. For failures of interoffice facilities, blocked calls also need to be counted. Many interoffice facilities carry traffic in both directions. In this case, if the number of blocked calls in only one direction can be determined, then the estimate of the number of blocked calls for both directions must be obtained by doubling that number. Our proposal, when interpreted and applied in this manner, will not result in the double counting of blocked calls but will accurately count the number of all blocked calls. Therefore, we adopt our

proposal. Additionally, we clarify that whenever a provider relies on available ''historical data,'' it must use historic carried call load data for the same day of the week and the same time of day as the outage, and for a time interval not older than 90 days preceding the onset of the outage. Finally, we must account for situations where, for whatever reason, real-time and historical data are unavailable to the provider, even after a detailed investigation. In such cases, the provider must determine the carried call load based on data obtained in the time interval between the onset of the outage and the due date for the final report; this data must cover the same day of the week and the same time of day as the outage. Justification that such data accurately estimates the traffic that would have been carried at the time of the outage had the outage not occurred must be available on request.

Outage Reporting Requirements for Wireless and Paging Communications

27. *A. Common Metric for Paging and Wireless Services.* Consistent with the 30-minutes/900,000 user-minutes criteria, we proposed in the *NPRM* to require wireless service providers to report outages of at least 30 minutes duration that potentially affect 900,000 user-minutes. We sought comment on this proposal. For those paging networks in which each individual user is assigned a telephone number, we proposed to define an end user as an assigned telephone number, and the number of potentially-affected user minutes would be the mathematical result of multiplying the outage's duration (expressed in minutes) by the number of potentially-affected assigned telephone numbers. It is our understanding that for other paging networks in which a caller must first dial a central number (*e.g.*, an ''800 number'') and then dial a unique identifier for the called party, the paging provider maintains a database of identifiers for its end users and would therefore know how many of its end users are potentially affected by any particular outage. The number of potentially-affected end users for those paging networks would simply be the mathematical result of multiplying the outage's duration (expressed in minutes) by the number of end users potentially affected by the outage. We sought comment on this interpretation and proposed addition to our rules.

28. In the *Report and Order,* we adopted outage reporting requirements for paging providers because of paging's vitally important role in alerting first responders and other critical personnel in emergencies, as well as its general importance as part of our Nation's telecommunications infrastructure. Nonetheless, we recognize that paging users are highly mobile, and there is no way to predict accurately how many users will be at specific locations at any particular time. Therefore, after considering the comments filed with respect to our proposal, we are adopting modified outage-reporting threshold criteria for paging to account for its unique characteristics. We find that the key, common element in paging networks is the switch. All messages are processed through a single switch before being distributed for broadcast. In addition, most paging switches have large numbers of users assigned to them. Therefore, if the switch cannot receive messages or distribute them to the transmitters, all assigned users are potentially affected. On the other hand, we find that it would be difficult to determine the number of potential users affected by the failure of one or more transmitters. Also, a failure of a single transmitter would not cause a service outage if the paging messages were successfully completed through the use of other transmitters. Therefore, we find that the 900,000 user-minute reporting threshold is applicable only to failures of the switch, and not to failures of individual transmitters. If the switch is incapable of processing paging messages for at least 30 minutes and at least 900,000 user-minutes are thereby potentially affected, then the paging provider will be required to report the outage to the Commission.

29. *B. Related Criteria for Wireless Communications.* To measure the extent of wireless service system degradation, in the *NPRM* we proposed to require the use of blocked calls instead of using assigned telephone numbers as a proxy for the usefulness of the system to users. In the wireless telephony service, a call is deemed ''blocked'' whenever the Mobile Switching Center (''MSC'') cannot process the call request of an authenticated, registered user. Call blocking can result from a malfunction or from an overloaded condition in the wireless service network. Usually when calls are blocked, users newly attempting to access the system cannot be registered on the system until the underlying problem is corrected. Because wireless service networks typically provide user access through several MSCs, an outage on a single MSC affects only those subscribers served by that MSC. Accordingly, under our proposal, call blocking on a single MSC would be reportable if it were to result in an outage of at least 30 minutes duration that meets or exceeds the 900,000 user-minute criterion.

30. To estimate the number of potential users affected by a significant system degradation of wireless service facilities, we proposed to require providers to determine the total call capacity of the affected MSC switch (or, in the case of a MSC that has more than one switch, the total call capacity of all switches in the affected MSC) and multiply the call capacity by the concentration ratio. Although the concentration ratio may vary among MSCs, we tentatively concluded that, on average, the concentration ratio used for determining the outage reporting threshold should be uniform to facilitate correlative analyses of outage reports from different wireless providers. Based upon discussions with telecommunications engineers and our understanding of typical traffic loading/switch design parameters, we proposed that the concentration factor be ten. Thus, a MSC switch that is capable of handling 3,000 simultaneous calls would have 30,000 potentially affected users (*i.e.*, $(3{,}000) \times (10) = 30{,}000$). We tentatively concluded that this concentration factor should adequately account for those users that are in the service area of the MSC and are thus eligible for immediate service. This factor would also take into account users that are assigned to the local home location register database for the MSC as well as potential visitors. Thus, under the general outage-reporting criteria that we proposed, wireless service providers would be required to report MSC outages of at least 30 minutes duration that potentially affect at least 900,000 user-minutes. The 900,000 minutes were calculated by multiplying the number of simultaneous calls the MSC can complete through the switch by the concentration ratio of 10, and then multiplying the result by the duration of the outage expressed in minutes. In the case of the preceding example, the calculation would be 3,000 multiplied by 10, or 30,000 users. 30,000 users multiplied by 30 minutes would equal 900,000 user minutes. That is, 3,000 (user switch capacity) multiplied by 10 (concentration ratio) equals 30,000 (number of potentially affected users). Then, 30,000 (number of potentially affected users) multiplied by 30 minutes (outage duration) equals 900,000 user-minutes. If the outage were to involve less than the full capacity of the switch, then that portion of the traffic that is disrupted would be calculated. For example, if a 3,000 user switch were operating at one-half of its capacity for one hour, during which the switch

could simultaneously serve a maximum of only 1,500 users, then the calculation would be 1,500 users multiplied by 10 = 15,000 potentially affected users. Then, 15,000 potentially affected users multiplied by 60 minutes would equal 900,000 user-minutes. This outage would meet the threshold and, therefore, would be required to be reported. We sought comment on this proposed addition to our rules and on whether there are specific types of wireless networks for which a concentration factor other than ten should be applied. As with CMRS paging providers, we also sought comment on possible alternative criteria for wireless service providers and approaches to measure the extent of the impact of system degradation that would yield useful outage data on which to base the development of best practices.

31. We further proposed to require the filing of an outage report whenever a MSC is incapable of processing communications for at least 30 minutes, without regard to the number of user-minutes potentially affected by the outage. Our reason for this specific proposal on MSC-outage reporting was based on our continuing need to be aware of the underlying robustness, as well as the overall reliability, of wireless networks. The MSC, in this regard, is a critical architectural component in wireless networks that is designed to address significant levels of traffic aggregation and call routing that is dependent upon SS7 signaling. We sought comment on these additional conclusions and further proposal.

32. In the *Report and Order,* after considering the comments filed with respect to our proposals, we have adopted modified outage-reporting criteria for wireless communications providers. First, we clarify that only those SMR providers that meet the definition of ''covered CMRS'' providers shall be required to submit outage reports. As explained in the *NPRM,* our intent is to include SMR providers that offer services interconnected with the PSTN and compete with cellular and PCS services. We believe that our clarification accurately depicts the SMR services to which we intend to apply outage-reporting requirements. Second, we find that there is a public interest need to determine the potential number of users that may be affected by an outage. As explained in the *NPRM* the current trend is for wireless users to replace their landline telephones with wireless service. The number of U.S. households that have completely cut the cord remains small. However, half of the wireless households report that wireless usage has replaced some, a significant amount or all of their regular telephone usage. In addition, wireless service providers are offering flat rate calling plans that encourages users to approximate wireline-calling patterns. Similar to wireline, there are many users who seldom make or receive wireless telephone calls, their main intent is to have communications available in case of an emergency. This reliance on wireless for emergency communications has reportedly increased in the wake of the September 11, 2001 terrorist attacks. In addition, in the immediate aftermath of these terrorist attacks, the volume of wireless communications traffic reached saturation levels, causing several wireless networks to become overloaded. In such situations, it is clear that the alternative proposed by some commenting parties, that we rely on either real-time or historical blocked call counts to determine whether an outage has reached the reporting threshold, would result in severe undercounts of the number of users that would have likely relied on wireless phones to attempt calls to reach emergency assistance or loved ones. Therefore, we find it imperative that the outage-reporting threshold rely on a more realistic method for calculating the number of users potentially affected by a wireless outage. The impact of an outage on the Nation's infrastructure and the growing reliance of first responders on wireless communications make the reporting of the number of potential users affected imperative to determine the robustness of the nation's wireless infrastructure. Although concentration ratios vary among MSCs, we believe that, on average, the concentration ratio used for determining outages should be uniform to facilitate correlative analysis of outage reports from different wireless providers. Based on discussions with telecommunications engineers and our understanding of typical traffic loading/switch design parameters, the *NPRM* proposed that the number be 10.

33. We conclude, however, that the concentration ratio should be reduced to 8 to account for the dynamic nature and the mobility of wireless telephony systems. The proposed concentration ratio of 10 was based on an analysis that assumed a presented load of 0.05 Erlangs/user, which is half the load presented to a typical wireline switch. We believed this assumption was justified in light of the fact that wireless phones, while gaining considerably in popularity, are still not complete substitutes for wireline telephone service. For example, because wireless users tend to be aware of remaining battery life, they may tend to shorten the average duration of their calls. Wireless calls can also terminate prematurely due to the uncertain nature of wireless coverage areas and dead spots. However, despite these issues, more recent information leads us to believe that more users are considering wireless service to be a complete substitute for wireline local exchange service, where issues like coverage area and battery life would weigh less on the average call duration, and that this trend is likely to continue. Hence, we find that our original assumption about the average load presented to a typical wireless switch was low but could increase in the future. After increasing the assumed presented load to a more realistic level, we conclude that the concentration ratio should be reduced to 8. Thus, a MSC switch that is capable of handling 3,750 simultaneous calls would have 30,000 potentially affected users (*i.e.*, $(3{,}750) \times (8) = 30{,}000$).

34. The comments help illustrate the complexities of developing a common method to estimate the number of potential users affected by an outage. The use of historical data will only account for the normal usage patterns of the MSC. Once a MSC is overloaded or is out of service there is no mechanism to count blocked calls. As a consequence, reliance on historical data would result in a gross underestimate of the number of roamers and the number of users who only use their wireless phones in an emergency. This underestimation of potential users through the use of historical data has been repeatedly illustrated during emergencies in which wireless usage has overloaded wireless networks. As one commenting party, the BloostonLaw Rural Carriers, concede, when a switch fails, all users assigned to the switch are potentially affected. We conclude that outage reports should account for all potential users, not just those users who normally use their phones.

35. The concentration ratio of 8 reflects the generic parameters that are routinely used in basic telecommunication traffic analysis. In practice, cellular and PCS networks strive to maintain not more than 2% blocking. The wireless design goal is to accommodate 2% blocking of calls during the busy hour. Similar statistical calculations are used to determine wireline switch capacity. During an *ex parte* meeting held on June 10, 2004, discussions with CTIA and other representatives of the cellular industry confirmed that wireless networks are designed to not permit more than 2%

blocking during the busy hour. This means that, on average, during the switch's busy hour, 2% of all calls presented to the switch will be blocked and 98% will be completed. Based on application of the 2% blocking factor and commonly accepted switch design parameters and principles, we find, first, that use of a concentration ratio to determine the call capacity of MSC switches is appropriate. Second, we find that the choice of 8 as the concentration ratio for determining the wireless outage-reporting threshold is also appropriate.

36. We conclude that application of a concentration ratio of 8 in determining the call capacity of MSC switches will not result in over counting users in rural areas. Finally, we find that the use of a common concentration ratio for all wireless networks will provide consistency, will be easy to understand and use, and, in turn, will best serve the public interest. In sum, we adopt a common concentration ratio of 8 based on our best engineering judgment as applied to the record before us. This concentration ratio corresponds to a service level approximately equal to a 2% blocking factor, for which wireless networks are designed. Accordingly, we have adopted our proposed method of determining the call capacity of a MSC, that is, the number of potential users = (MSC switch capacity) × (the concentration ratio of 8). We recognize, however, that this concentration ratio may change over time. As a consequence, we direct the Chief, Office of Engineering and Technology, to monitor the numerical value of the concentration ratio and advise the Commission if this value needs to be revised to more adequately reflect the number of potential users that are impacted by an outage.

37. *Outage Reporting Requirements for Cable Circuit-Switched Telephony.* Failures in various portions of cable network infrastructures can cause disruptions to cable circuit-switched telephony service. For example, failures within the cable distribution plant, the fiber distribution plant, cable headend systems, and voice terminating equipment, as well as failures within Local Exchange Carrier (''LEC'') facilities such as switches and other points within the PSTN can cause cable telephony to be disrupted. Circuit-switched telephony provided by cable operators has always been subject to our communications disruption reporting requirements, and outage reports have been filed by cable operators. Nonetheless, we proposed to amend § 63.100 to make it explicitly clear that cable circuit-switched telephony is subject to our service disruption reporting requirements. The current thresholds for reporting cable telephony outages are the same as those for wireline telephony—outages must last at least 30 minutes in duration and potentially affect at least 30,000 customers. We proposed to apply to cable telephony the same revised threshold-reporting criteria (30 minutes/900,000 assigned telephone number-minutes potentially affected) that we proposed for wireline telephony outage reporting and sought comment on this proposed addition to our rules. In the *Report and Order,* we adopted our proposed outage-reporting requirements for cable communications providers. We note that the customer base for circuit-switched telephony over cable may not be as large as the one over wireline and, hence, few cable outages might be reported. However, the reporting threshold that we adopted will capture outages when they are sufficiently long, and it is a more stringent threshold than the existing one. We do not find that the needs of homeland security warrant a different action at this time. Also, as we stated in the *NPRM,* we are not addressing VoIP or public data network outage reporting at this time.

38. *Outage Reporting Requirements for Satellite Communications.* Section 63.100 of our rules does not contain outage-reporting requirements that are applicable to satellite communications. We tentatively concluded in the *NPRM,* that because of the increasing role and importance of satellites in our national communications infrastructure, it would be prudent to require U.S. space station licensees and those foreign licensees that are providers of satellite communications to the American public to report all major failures. This would apply to satellites or transponders used to provide telephony and/or paging. Thus, our proposal did not include satellites or transponders used solely to provide intra-corporate or intra-organizational private telecommunications or solely for the one-way distribution of video or audio programming.

39. Satellite communications have space components and terrestrial components. The reporting requirements that we proposed cover all satellite communications outages, regardless of whether they result from failures in the space or terrestrial components. Specifically, we proposed to require the reporting of any loss of complete accessibility to a satellite or any of its transponders for 30 minutes or more. Such outages could result, from an inability to control a satellite, a loss of uplink or downlink communications, Telemetry Tracking and Command failures, or the loss of a satellite telephony terrestrially-based control center, and we regard such outages to be major infrastructure failures. Analogous to the cases of wireline, wireless, and cable communications, we also proposed to require the reporting of the loss, for 30 minutes or more, of any satellite link or its associated terrestrial components that are used to provide telephony and/or paging, whenever at least 900,000 user-minutes are potentially affected. We anticipated that the satellite provider's Network Operations Center would be aware of the loss of satellite system components and their potential impact on end users. For telephony and many paging networks, one user-minute would be defined as one assigned telephone number-minute.

40. The *Report and Order* adopted modified outage-reporting criteria for satellite communications. We are persuaded that FSS communications providers do not have a way to determine the number of end users nor the nature of the communications traffic that would be potentially affected by any given transponder failure. In addition, we find that MSS service providers are not likely to know how many end users are potentially affected during intermittent service disruptions. Nevertheless, we think it is important that major outages of satellite networks involving voice or paging services be reported. As a result, in the *Report and Order*, we adopted a two tier approach for reporting—one for satellite operators and one for satellite communications providers. In either of the satellite outage reporting tiers, we are applying our rules only to voice and paging communications. In many cases, the satellites may carry a mix of traffic that includes video or audio programming, or private network communications, which are not covered by these rules. We believe that it is important that we obtain information on any outages that meet our criteria if they could involve voice or paging communications. As a result, our reporting rules will not apply to satellites, satellite beams, inter-satellite links, MSS gateway earth stations, and satellite networks when those elements are used exclusively for non-covered services (that is, when they never are used to carry voice or paging communications). We believe this clarification will help satellite operators and satellite communications providers to determine more easily when reporting is required, and are modifying our rules accordingly. We are also modifying our rules to more clearly

distinguish between the requirements that apply to satellite operators and satellite communications providers.

41. As a first tier, all satellite operators will be required to report any outage of more than 30 minutes duration of the following key system elements: satellite transponders, satellite beams, inter-satellite links, or entire satellites. In addition, MSS satellite operators will be required to report any outage of more than 30 minutes duration at any gateway earth station. We recognize that several commenting parties have suggested that reporting requirements should apply only for service outages, not for equipment outages. They argue that satellite operators can often bring in-orbit spares into use or rely on other satellites in the network to provide coverage. While this may be true, we still believe that reporting should be required when key satellite system elements have failed for more than 30 minutes. Satellite systems in general are expensive and difficult to replace, and it can take a long time for replacement satellite systems to be manufactured and launched. Furthermore, use of in-orbit spares or other satellites in a network can have a significant impact on future satellite network redundancy and overall system capacity. Given the critical backup role that satellites systems play in the overall U.S. communications infrastructure, we believe it is essential that operators report outages of key satellite system elements.

42. We have adopted rules that identify the key satellite system elements, which would require reporting if there is an outage of more than 30 minutes duration, as satellite transponders, satellite beams, inter-satellite links, or entire satellites. We are also applying reporting requirements to MSS gateway earth stations if there is an overall gateway outage of more than 30 minutes duration. The reporting requirements will not apply to individual MSS gateway earth station outages where other earth stations at the gateway location are used to continue gateway operations within 30 minutes. Outage of any of the key satellite elements for an extended period could have a significant impact on the overall functioning of a satellite network and can affect system coverage, capacity and usability. They can also affect that ability of satellite systems to handle higher levels of emergency traffic if there is an outage elsewhere in the communications infrastructure. We note that this approach avoids the concerns raised by satellite operators that they could not determine the number of users or user-minutes that would be involved in an outage.

43. The second tier of our approach for satellite outage reporting is to require satellite communications providers to report outages that involve more than 900,000 user-minutes. We recognize that a FSS satellite operator may not know that an outage is even occurring when it involves the failure in a service provider's network that communicates with the FSS satellite. However, the satellite communications provider should know when such an outage occurs, and should be responsible for reporting that outage just as other non-satellite communications providers are required to do. We recognize that there may be cases, as raised by MSS operators, that a satellite communications provider doesn't know how many users may be potentially affected by the outage. This can be particularly true with the MSS operator is providing service both inside and outside the U.S. In those cases, we expect the satellite communications provider to determine whether reporting is required based on an estimate of how many users in the U.S. might be impacted and the amount of time those users lose service.

44. *Reporting of Major Infrastructure Failures.* The communications outage reports that we have received over the past ten years have provided significant insight into some of the major problems affecting circuit-switched voice communications. The infrastructure used to provide these services, however, is also used to provide many other services that are essential to Homeland Security and our Nation's economy. A tiny glimpse into the other uses of our Nation's communications infrastructure was provided in Verizon's network outage report covering the World Trade Center disaster on September 11, 2001. That report states that ''some 300,000 dial tone lines and some 3.6 million DS0 equivalent data circuits were out of service'' as a result of the damage. The ratio of more than ten times as many DS0-equivalent services using the infrastructure as dial tone lines is not unusual in a major metropolitan area. Most of the DS0-equivalent circuits are used to carry what are frequently called ''special services.'' While we have not previously required the reporting of communications outages that affected large numbers of special services, we need to recognize in our communications disruption reporting rules the continuously increasing importance of data communications throughout the United States. We tentatively concluded in the *NPRM* that our rules should be revised to account for certain important attributes of special services. Rather than collect information that is limited specifically to ''special services,'' however, we proposed to directly address the underlying issue and collect information on the potential impact on all communications services of major infrastructure failures.

45. *A. DS3 Minutes.* As a consequence, we proposed to establish additional outage-reporting criteria that would apply to failures of communications infrastructure components having significant traffic-carrying capacity. This requirement would apply to those communications providers for which we have already proposed outage-reporting requirements and would also apply to those affiliated and non-affiliated entities that maintain or provide communications networks or services on their behalf. We tentatively concluded that the threshold reporting criterion for such infrastructure outages should be based on the number of DS3 minutes affected by the outage because DS3s are the common denominator used throughout the communications industry as a measure of capacity.

46. In the *Report and Order,* after considering the comments, we adopted our proposal to require the reporting of all outages that last at least 30 minutes and affect 1,350 or more DS3 minutes. For example, if 45 or more DS3s are out of service for 30 minutes, an outage report must be filed. However, the quantity of DS3s affected in an outage is just one factor used to determine if the 1,350 DS3 minute threshold has been reached. Outages of longer duration will become reportable for fewer than 45 DS3s according to the 1,350 DS3 minute threshold. For example, a single DS3 that was out of service for 1,350 minutes would constitute a reportable outage. Similarly, an outage of two DS3s for 675 minutes would constitute a reportable outage, and so forth.

47. When a DS3 is part of a protection scheme such as a SONET ring, it will frequently switch to a protect-path within seconds of a failure in the primary path. The communication services being provided over the DS3 will not be immediately affected, *but they will no longer be protected.* Unfortunately, we have had a number of network outages reported where there are multiple failures on a SONET ring at different points in time, in one case five months after the initial failure. The second failure that occurs before the first failure is repaired causes the loss of all communications services being provided over the DS3. We therefore require that DS3s that switch to protect

be counted in DS3 outage minutes until such time as the DS3s are restored to normal service, including protection. An analogy would be to a two-engine airplane that can still fly with one engine. If one engine fails, the second (protection) engine keeps the plane flying but in an impaired state. Service is not restored to normal until both engines operate properly. Protected communications services are not restored to normal until both the primary and protect DS3s operate properly. In this same regard, if protection DS3s should fail while the primary DS3s are still working, services would not be immediately affected but the failed DS3 minutes are still counted toward the reportable trigger due to the loss of protection. Hence, we reject the proposed alternative that would exempt failures of DS3's that are part of a protection scheme.

48. A DS3 is a communications highway that has been put in place to carry traffic in a digital format. That traffic can range from simple alarm and control circuits, to voice circuits, to radio and television programs, to circuits carrying ATM or credit card transactions, to FAA flight control circuits, to Department of Defense circuits, to circuits transferring billions of dollars from one Federal Reserve Bank to another, to circuits critical to the operation of the stock and bond markets. Some DS3s that carry no traffic are built strictly as protection in the case of a failure of another DS3. We find it necessary to point out that our concern is with the loss of communication highways regardless of how lightly or heavily they may be loaded at the time of an outage. The actual impact of a DS3 failure is that a communications highway that is part of this nation's communications infrastructure is no longer available. We are not asking carriers to calculate the potential impact of a DS3 failure. For example, if a failed DS3 is the only working DS3 in an OC48 (with 48 possible DS3s), then the potential is for 48 DS3s to have failed. Likewise, if that same OC48 was riding one fiber in a 72-fiber cable that was cut, then the potential is for all of the fibers to be multiplexed at the OC48 level even if some of the fibers were actually dark. We only require that the working DS3s be counted, not those that could be potentially working.

49. A number of commenting parties suggested that only DS3 failures that should be reported are those where ''the service provider owns, operates and maintains the electronic terminal equipment at both end points.'' This is an extremely restrictive provision that would be very difficult for the ''service provider'' to implement. The American National Standard for Telecommunications, T1.238–2003 (Information Interchange—Structure for the Identification of Telecommunications Facilities for the North American Telecommunications System), used to identify DS3s, does not even include data elements that identify who owns, operates or maintains the electronic terminal equipment at the ends of DS3s. The Commission is concerned with understanding infrastructure failures that might suggest that adequate facilities are not being provided to serve the communications needs of the people of the United States, and not with who owns, operates and maintains the electronic terminal equipment. Hence, we reject the suggestion that the only DS3 failures that should be reported are those where ''the service provider owns, operates and maintains the electronic terminal equipment at both end points.''

50. We also clarify that we have no intention of asking service providers to report individual DS3 outages where the customer has deliberately turned the DS3 off, or where the customer's equipment has failed. To do so would be unfair to the communications provider. However, if that same DS3 goes through a multiplexer, a digital cross-connect, a fiber cable or other network component that fails then it shall be counted as one of the many DS3s that are affected. The determination that a customer intentionally or unintentionally caused a DS3 failure typically cannot be made until after service is restored.

51. We agree with the suggestion that the service provider whose infrastructure network component causes a reportable DS3 outage, or has maintenance responsibility for the point of failure, should submit an outage report. But we will not limit the reporting responsibility to such providers only. In this regard, we recognize that any given failure may trigger multiple outage reports. We have made the reporting process very simple so as to readily accept and process multiple reports triggered by the same event such as a fiber cable cut. The individual fibers in the cable may be leased to different organizations, and the working DS3s riding on each fiber may be used to provide a wide variety of services. If a reportable quantity of calls is blocked due to the cut fiber then that should be reported. Likewise, if the cut fiber also causes a reportable quantity of wireline user minutes to be potentially affected then that should also be reported. The value of this system of outage reporting is that it is most likely to reveal how failures in one part of a network can trigger failures in other parts of the same network or in other networks. The needs of homeland security and the long-term goal of improving network security and reliability demand no less.

52. We disagree with AT&T's suggestion that in cases in which DS3s are the subject of a Service Level Agreement, they should not be counted in DS3 outages. The presence or absence of a SLA is not shown in the records described in ANSI T1.238–2003 and such information would only be readily available to the parties to the contract. Communications service providers routinely contract with third party vendors for equipment and various services, but the service provider always maintains ultimate responsibility for its network operations and services. Thus, all DS3s, regardless of whether they are the subjects of SLAs, shall be included in the DS3 minute calculation. We disagree with BellSouth's assertion that our proposal on outage reporting for major infrastructure failures would result in the indirect regulation of the ''Internet and other data services'' that should be free of regulation. Internet and data services are two examples of hundreds of services that can be, and are, provided on DS3s. We have no intention of requiring every carrier to examine all of the services that were provided on every failed DS3 and then deciding if it is reportable. That would be an almost impossible burden for the carriers and would unacceptably extend the amount of time that would be required before an outage would be reported. If a DS3 fails it shall be counted regardless of the services it was providing at the time of the failure. We also disagree with the contention that a ''working DS3 should be defined as one that has more than 10% of the DS0s in use, *i.e.,* 67 DS0s'' and the SBC suggestion to increase the threshold to 400 DS0s. Many of the working transport DS3s being are not demultiplexed down to the DS2, DS1, or DS0 level within the confines of the reporting carrier so it would be almost impossible to determine how many DS0, or DS0-equivalent, channels were in use at the time of a failure. The fact that a DS3 is working, as we have defined working, is sufficient for it to be counted as part of this infrastructure.

53. We also disagree with the suggestions that various labels, such as ''access,'' ''customer,'' ''interoffice,'' or ''infrastructure'' be placed on DS3s and that they then be counted, or not, depending on the label. None of the labels suggested by the commenting

parties are clearly defined and they are not necessary to identify a failure. We are not asking telecommunications providers to apply various labels to working DS3s and then to count them, or not count them, based on those labels. The fact that a DS3 is working, as we have defined ''working,'' is sufficient for it to be counted as part of the infrastructure.

54. We observe that Nextel's comments regarding problems it has had with T–1 (DS1) lines provided by ILECs illustrate just how dependent wireless carriers are on the services provided by wireline carriers. While we are concerned with the DS1 problems identified by Nextel we decline to include DS1s in the outage reporting requirements at this time.

55. We also observe that, in the case of a ''mid-span meet,'' we require, at a minimum, that an outage report be submitted by the provider whose network element failed or who ''has maintenance responsibility for the point of failure.'' Other service providers may also report the same failure if their failed services met one of the other reporting thresholds such as blocked calls or user minutes. MCI recognizes that ''a single outage situation could * * * give rise to two [or more] reportable events.'' We recognize this possibility and have made the electronic reporting of outages as simple as possible. The advantage of multiple reports of the same outage under these circumstances is that: (i) Outages can be reported more rapidly without provider confusion as to who should report; and (ii) we will have a much better understanding of the overall impact of a given outage. We further observe that several commenting parties portray DS3 outage reporting as far more complex a matter than we intend it to be. These concerns are misplaced. We have absolutely no intention of placing a burden on the DS3 provider to determine just what services were being carried, nor of determining just how many DS0s, if any, might have been in use, at the time of the outage, nor of determining the ''real impact on end users'' (an almost impossible task). Our concern is with the failure of working DS3s regardless of the services being carried or the fill at the time of the failure. In this regard, while a DS3 has a capacity of 672 DS0 communication channels, this is not relevant to infrastructure outage reporting since it is only one of hundreds of possible services that can be carried in a DS3. A DS3 is simply a unit of communications capacity that can be and is used to carry hundreds of different services, and the services that are actually carried can vary from hour to hour, if not moment by moment.

56. *B. Signaling System Seven (''SS7'').* In the *NPRM*, we observed that Signaling System 7 (SS7) networks provide information to process, and terminate, virtually all domestic and international telephone calls irrespective of whether the call is wireless, wireline, local, long distance, or dial-up telephone modem access to ISPs. SS7 is also used in providing SMS text messaging services, 8XX number (*i.e.,* toll free) services, local number portability, VoIP Signaling Gateway services, 555 type number services, and most paging services. Currently our rules do not require outage reporting by those companies that do not provide service directly to end users. In addition, even for companies currently subject to outage reporting requirements, no threshold reporting criteria are currently based on blocked or lost SS7 messages. Implicit in this statement is that a blocked or lost signaling message will result in a blocked or lost call. There are numerous types of failures that have already resulted in lost or blocked signaling messages. For example, SS7 failures have occurred: when both A links were cut; when A links were out of service due to a common power pack failure; when a timing problem on both A links isolated a central office; when all B links became overloaded; when a common software problem caused a pair of STPs to fail; when a translation error caused both STPs to fail; when a common table entry error caused both SCPs to fail; and when a software upload problem in both STPs resulted in SS7 service failure.

57. As a consequence, the *NPRM* proposed the addition of SS7 communications disruption reporting requirements. To be more specific, all providers of Signaling System 7 service (or its equivalent) would be required to report those communications disruptions of at least 30 minutes duration for which the number of blocked or lost ISDN User Part (ISUP) messages (or its equivalent) was at least 90,000.

58. In the *Report and Order,* we agree with most commenting parties that third-party SS7 providers should have to report an outage if the outage is big enough so that one or more affected carriers would also have to report. Having both the third party SS7 providers report as well as the affected communications service providers will help us to understand underlying vulnerabilities in these interconnected signaling networks. We continue to find it important for carriers to report outages that affect their customers even if the actual cause of the outage did not occur in their network or was not caused by them. This is the case with our current rule, and we find no reason to change the rule in this regard. The Commission continues to need outage information irrespective of whether culpability has been definitely determined. In the absence of such outage information, it may not be possible to determine with rapidity whether further action is necessary. Under the requirements that we have adopted, if several small carriers are simultaneously affected by an outage in a third-party SS7 provider's network, the third-party SS7 provider must report the outage if it meets the threshold criteria.

59. We shall require carriers and third party SS7 providers with access to blocked call information to report each outage in an SS7 network that lasts 30 minutes and either generates 90,000 blocked calls based on real-time traffic data or would result in 30,000 lost calls based on historic carried loads. Blocked or lost call information should be readily available for database outages (*e.g.,* ''800-number'' service outages). Also, third party SS7 providers may be able to use their link monitoring system to obtain blocked call data for other outages. In addition, third party SS7 providers could ask for traffic data from the affected carriers. Whenever blocked or lost call information is available, that information must be used to determine whether the reporting-threshold criteria have been met. For situations in which blocked or lost call information is unavailable, we had proposed to use a count of lost ISUP messages as a surrogate for a count of lost or blocked calls. We agree with Alcatel, however, that there is an equally acceptable, more straightforward, and less burdensome alternative that will achieve this same goal. That is, whenever a third party SS7 provider cannot directly estimate the number of blocked calls, the provider must count the number of lost MTP messages (level 3). A count of 500,000 real-time lost MTP messages shall be used as a surrogate for 90,000 real-time blocked calls, and a count of 167,000 lost MTP messages on a historical basis shall be used as a surrogate for 30,000 lost calls based on historic carried loads. (Alcatel estimates that there are between 5 and 6 times as many MTP messages as there are call attempts.) Additionally, we clarify that whenever a provider relies on available historic carried call load data, that data must be for the same day of the week and the same time of day as the outage,

and for a time interval not older than 90 days preceding the onset of the outage. Finally, we must account for situations where, for whatever reason, real-time and historical data are unavailable to the provider, even after a detailed investigation. In such cases, the provider must determine the carried load based on data obtained in the time interval between the onset of the outage and the due date for the final report; this data must cover the same day of the week and the same time of day as the outage. Justification that such data accurately estimates the traffic that would have been carried at the time of the outage had the outage not occurred must be available on request.

60. *Electronic Filing and New Reporting Process.* Consistent with authority granted by the Communications Act of 1934, as amended, and in furtherance of the objectives of the Government Paperwork Elimination Act, 44 U.S.C. 3504 note, Public Law 105–277, Div. C, Title XVII, 112 Stat. 2681–749 (1998), we proposed in the *NPRM* to require that communications outage reports be filed electronically with the Commission. (An illustrative depiction of the proposed data collection fields was set forth in Appendix C of the *NPRM.*) Electronic filing would have several major advantages for the Commission, reporting communications providers, and the public. For example:

- Providers would be able to file reports more rapidly and more efficiently.
- Information would be updated immediately. The expenses and efforts that are associated with the outage reporting process should be reduced substantially which, in turn, should result in continuing productivity gains.
- Changes to outage report data should be more easily accessible by communications providers, the public, and the Commission. Thus, reporting entities should be able to file initial and final report information more easily, and interested parties should also be able to access this information more quickly.
- Changes to electronic input form(s) can be implemented more quickly. Two of the purposes of the reliability database are to help identify causes of outages and to refine best practices for averting failures in communications networks. As networks evolve and experience is gained, the data fields can be more easily revised to improve the quality of the information received to reflect changes in communications infrastructures and management procedures.
- In addition, security precautions can be implemented to authenticate access by authorized users.

61. Our current outage reporting rules do not require, or even refer to, electronic filing (other than by facsimile). Although it is understandable, in retrospect, that our rules did not incorporate electronic filing because the Internet was just beginning to expand in 1992, we tentatively concluded that the time has now arrived to implement electronic filing procedures. These procedures should not only facilitate compliance with the objectives that are expressed in the Government Paperwork Elimination Act but also should improve service to the public, enhance the efficiency of our internal operations, and virtually eliminate any burden that would be associated with complying with the proposed reporting requirements. Irrespective of any of the reporting requirements that we proposed, we expect that communications firms will track, investigate, and correct all of their service disruptions as an ordinary part of conducting their business operations—and will do so for service disruptions that are considerably smaller than those that would trigger the reporting criteria that we proposed. As a consequence we believe, in the usual case the only burden associated with the reporting requirements contained in this *NPRM* will be the time required to complete the initial and final reports. We anticipated that electronic filing, through the type of illustrative template that we appended to the *NPRM*, will minimize the amount of time and effort that will be required to comply with the rules that we have adopted. Electronic records and signatures are legally binding to the same extent as if they were filed by non-electronic means. *See generally,* Sections 101–106 of the Electronic Signatures in Global and National Commerce Act, Public Law 106–229, June 30, 2000, 114 Stat. 464, codified at 15 U.S.C. 7001–7006.

62. We recognized in the *NPRM* that it may, however, be desirable for other reasons to have alternative ways by which outage reports can be filed with this Commission. Accordingly, we requested comment on whether there are any circumstances under which electronic filing would not be appropriate and, if so, on what alternative filing procedures should be used in such circumstances. Finally, we recognized that as experience is gained with the electronic filing of outage reports, modifications to the filing template may be necessary to fully implement an automated outage reporting system that will maximize reporting efficiency and minimize the time for providers to prepare, and for the Commission staff to review, outage reports. Accordingly, we proposed to delegate authority to the Chief, Office of Engineering and Technology to make the revisions to the filing system and template that are necessary to achieve these goals.

63. In the *Report and Order*, we agree with virtually all suggestions made about the electronic reporting process. That is, we agree that it is necessary to provide a method for time and date stamping all report submissions. The current process date stamps all faxed transmissions, with electronic time and date stamping occurring virtually automatically. All submissions will have a unique identifier or control number. We agree that companies will be allowed to prepare, save, and update draft reports to allow for management review and revision. The draft reports should not be available to anyone other than the reporting company since the information may still be tentative. We will permit providers to print drafts and reports submitted to the Commission. We plan on allowing only a small number of users from each company to submit and edit initial and final reports for security reasons. We are currently investigating the proper level of security for the electronic system. This may include digital signatures and encryption. We will allow for the appropriate withdrawal of the two-hour notification reports without requiring a formal retraction letter. We agree that companies need to be able to withdraw notifications and initial reports in legitimate circumstances (such as where a notification was filed under the mistaken assumption that a reportable outage had occurred). However, the system will keep copies of all submissions. The electronic system will be able to deliver a filed copy.

64. We adopted the suggestion that our outage-reporting template contain a link to a website for accessing the list of Best Practices. Since several reporting fields are related to the use of Best Practices, it is essential to make it easy for users to access the relevant Best Practices. We have adopted suggestion that the template indicate whether the report is an initial report or a final report. Clearly, we need to be able to distinguish between initial and final reports. The electronic template will have a field to designate the appropriate time zone in which the outage occurred, as suggested by BellSouth. This will make it easier to compare outages that occurred nearly simultaneously across the country. We plan to have instructions for all the fields. We

disagree that the outage template is too comprehensive noting that we received suggestions for additional fields. We disagree with the comments that suggest that it is inappropriate and wasteful for the Commission to require different entities to file reports with respect to the same underlying outage. We have historically required all entities to report the same event if those companies cross one of our thresholds. There have been some instances of multiple filings on the same event in the past, but typically the number of reports per such events does not exceed two. Requiring all companies that cross a relevant threshold to report is simpler and, in the long run, less burdensome to all. And, it facilitates faster reporting which is essential for homeland security. If a communications provider experiences a single outage that satisfies several reporting thresholds (*e.g.*, wireline, SS7 and DS3), the provider will be required to file only one report for the outage. The only occasions that a communications provider would have to file an outage report when it has not experienced an outage that satisfies the general threshold criteria based on the 30-minute/900,000 user-minute common metric are when it experiences outages based on the additional threshold criteria that we are adopting (*e.g.*, for DS3 or SS7). Generally, on only rare occasions, the modified rule could result in the filing of an additional report on the same outage event; in the case of SS7 outages, for example, an additional report could be required as a result of an outage in a third-party SS7 network. Finally, analysis of these additional reports could be exceedingly important in understanding how reliability in one network affects the reliability of other networks. The insights gleaned from such analysis could contribute greatly to increasing the reliability and security of the nation's telecommunications infrastructure and to furthering our Nation's homeland security.

65. With respect to the issue of potential duplication of the efforts of the states, we emphasize that we do understand the potential value of having one outage template instead of 50 different templates. Individual states, however, may have their own unique needs that could necessitate their collection of outage-reporting data that may differ from that needed by the Commission. It is, however, possible that our reporting requirements may provide a common framework that will be of assistance to state, commonwealth and territorial governments; and which may, therefore, serve to reduce the number of outage reports that might otherwise be required by those jurisdictions. Furthermore, we anticipate increased collaboration with DHS, state and local governments, and expert industry groups on matters of network reliability, homeland security, and emergency communications. The fruits of this collaboration will require that adjustments be made to our outage-reporting template and filing system on an expeditious basis. The most efficient manner in which the Commission can address this issue is to delegate authority to the Chief, Office of Engineering and Technology, to make necessary changes to the template and filing system.

66. *Conclusion.* We have adopted outage-reporting requirements for wireline, cable, satellite, and terrestrial wireless communications providers, Signaling System 7 providers, and ''affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications.'' We conclude that this action will best serve the public interest by enabling the Commission to obtain the necessary information regarding services disruptions in an efficient and expeditious manner. This action addresses the critical need for rapid, full, and accurate information on service disruptions that could affect homeland security, public health and safety, as well as the economic well being of our Nation. This action takes into account the increasing importance of non-wireline communications, as well as wireline communications, in the Nation's communications networks and critical infrastructure.

Final Regulatory Flexibility Analysis

67. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),[1] an Initial Regulatory Flexibility Analysis (IRFA) was incorporated into the *Notice of Proposed Rulemaking* in this proceeding.[2] The Commission sought written public comment on the proposals in the *NPRM*, including comment on the IRFA. The comments received are discussed in the FRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.[3]

68. *A. Need for, and Objectives of, the Report and Order:* The purpose of the *Report and Order* is to extend the Commission's requirements for reporting communications disruptions to communications providers that are not wireline carriers.[4] Previously, such requirements have applied to wireline and cable telecommunications common carriers only.[5] Now they will additionally apply to all communications providers that offer circuit-switched telephony, satellite communications providers, Signaling System 7 providers, terrestrial wireless communications providers, and affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications. We have taken this action because we recognize the critical need for rapid, full, and accurate information on service disruptions that could affect homeland security, public health and safety, as well as the economic well-being of our Nation, especially in view of the increasing importance of non-wireline communications in the Nation's communications networks and critical infrastructure. We also are moving the outage-reporting requirements from part 63 of our rules to part 4 as a way to take cognizance that, although these requirements were originally established within the telecommunications common carrier context, it is now appropriate to adapt and apply them more broadly across all communications platforms to the extent discussed in the *NPRM*. Further, in an effort to promote rapid reporting and minimal administrative burden on covered entities, we are streamlining compliance with the reporting requirements through electronic filing with a ''fill in the blank'' template and by simplifying the application of that rule. In addition, we are adopting a common metric that would establish a general outage-reporting threshold for all covered communications providers.

[1] *See* 5 U.S.C. 603. The RFA, *see* 5 U.S.C. 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Public Law 104–121, Title II, 110 Stat. 857 (1996).

[2] *In the Matter of* New *Part 4 of the Commission's Rules Concerning Disruptions to Communications*, ET Docket No. 04–35, *Notice of Proposed Rulemaking*, FCC 04–30, 19 FCC Rcd 3373 (2004) (''*NPRM*''), at ¶ 56 and Appendix C.

[3] *See* 5 U.S.C. 604.

[4] By the term ''communications provider'' we mean an entity that provides two-way voice and/or data communications, and/or paging service, by radio, wire, cable, satellite, and/or lightguide for a fee to one or more unaffiliated entities.

[5] *See* § 63.100 of the Commission's rules currently requires only wireline and cable telecommunications common carriers to report significant service disruptions. Section 63.100 of the Commission's rules, which is codified at 47 CFR 63.100, was first adopted in 1992. *Notification by Common Carriers of Service Disruptions*, CC Docket No. 91–273, *Report and Order*, 7 FCC Rcd 2010 (1992); *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 8 FCC Rcd 8517 (1993); *Second Report and Order*, 9 FCC Rcd 3911 (1994); *Order on Reconsideration of Second Report and Order*, 10 FCC Rcd 11764 (1995).

These actions are designed to allow the Commission to obtain the necessary information regarding services disruptions in an efficient and expeditious manner and achieve significant concomitant public interest benefits.

69. The general outage-reporting threshold criteria that we adopted specify that those outages of at least 30 minutes duration that potentially affect 900,000 user-minutes must be reported. This metric is the mathematical result of multiplying the number of end users potentially affected by the outage and the outage's duration expressed in minutes. For example, a 30-minute outage that potentially affects 30,000 users meets the 900,000 user-minute threshold for reporting (*i.e.*, 30,000 users × 30 minutes = 900,000 user-minutes). Also, a 60-minute outage that potentially affects 15,000 users meets this threshold (*i.e.*, 15,000 users × 60 minutes = 900,000 user-minutes). We also adopted specific outage-reporting thresholds for 911/E911 services and for other special offices and facilities. Major airports have always been included as special offices and facilities, and we are expanding this definition to include all of those airports that are primary (PR), commercial service (CM), or reliever (RL) airports as listed in the FAA's National Plan of Integrated Airport Systems (NPIAS) (as issued at least one calendar year prior to the outage). We also specified thresholds for major infrastructure failures, such as those involving the loss of DS3 facilities or Signaling System 7 messages.

70. *B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA:* One comment—by the Rural ILECs [6]—was filed directly in response to the IRFA. The Rural LECs state that the outage reporting rules that we proposed in the *NPRM*—which called for detailed, initial communications outage reports to be filed within 120 minutes of the discovery of the outage—''could compromise the ability of a small, rural ILEC to restore service during the crucial hours immediately after the onset of an outage. Indeed, compliance with the proposed rules may be technically infeasible in situations where faxes cannot be sent and the Internet cannot be accessed.'' [7] To minimize the impact on small, rural companies, they suggest that the Commission exempt those companies that are already subject to state outage reporting requirements. They further suggest that the Commission permit those companies that are not subject to such state requirements to report outages orally within 24 hours of the discovery of a reportable outage.[8]

71. Based on these comments and the more general comments of other parties in the proceeding, we are adopting modifications to our proposed rule that, we believe, will adequately address the concerns raised by the Rural LECs. Specifically, instead of requiring the filing of a detailed, initial outage report within 120 minutes of discovery of the outage, we are requiring the filing of only a bare-bones Notification disclosing the name of the Reporting Entity; the Date and Time of onset of the outage; a Brief Description of the Problem; the particular Services Affected; the Geographic Area affected by the outage; and a Contact Name and Contact Number by which the Commission's technical staff may contact the reporting entity. We will not require the more detailed initial outage report to be filed until 72 hours after discovery of the outage. The final communications outage report will be due 30 days after discovery of the outage, as originally proposed. This action will enable communications providers to focus on their repair and restoration efforts immediately after onset of the outage. The bare-bones Notification that we require will not substantially divert them from these efforts but will alert the Commission to the possibility that a major communications might be occurring. The 72-hour time frame for filing initial outage reports is more generous than the 24-hour time frame suggested by the Rural ILECs. The notification will be submitted electronically, but if the outage makes this impossible, other written alternatives (such as FAX or courier) will suffice. The initial and final reports will be filed electronically. We believe that electronic filing will minimize the burdens imposed on all reporting entities, including those (if any) which might be considered to be small businesses. We do not adopt the Rural ILECs suggestion that we exempt those small, rural companies that are subject to state outage-reporting requirements. We believe that there is a legitimate need for the national, uniform outage-reporting system that we adopted and which covers various communications platforms. This system is designed to address the critical need for rapid, full, and accurate information on service disruptions that could affect homeland security, public health and safety, as well as the economic well being of our Nation. Nonetheless, as the Commission, the Department of Homeland Security, and appropriate State authorities gain experience with the outage-reporting system that we adopting, the Commission and the States may make further refinements in their systems to improve the analytic results that can be gleaned from them and to eliminate any unnecessary duplication.

72. *C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply:* The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein.[9] The RFA generally defines the term ''small entity'' as having the same meaning as the terms ''small business,'' ''small organization,'' and ''small governmental jurisdiction.'' [10] In addition, the term ''small business'' has the same meaning as the term ''small business concern'' under the Small Business Act.[11] A ''small business concern'' is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[12]

[6] The Rural ILECs include the following 33 rural incumbent local exchange carriers that state that they have fewer than 1,500 employees and should therefore be considered to be small businesses: Big Sandy Telecom, Inc.; Bluestem Telephone Company; C–R Telephone Company; Chautauqua and Erie Telephone Corporation; China Telephone Company; Chouteau Telephone Company; Columbine Telecom Company; Community Service Telephone Company; Ellensburg Telephone Company, Inc.; Fremont TelCom; Great Plains Communications, Inc.; GTC, Inc.; Kennebec Telephone Company; K&M Telephone Company; Maine Telephone Company; Marianna and Scenery Hill Telephone Company; Northland Telephone Company of Maine, Inc.; Odin Telephone Exchange, Inc.; Peoples Mutual Telephone Company; RC Communications, Inc.; Roberts County Telephone Cooperative Association; Sidney Telephone Company; Standish Telephone Company, Inc.; STE/NE Acquisition Corp. d/b/a Northland Telephone Company of Vermont; Sunflower Telephone Co., Inc.; Taconic Telephone Corp.; The El Paso Telephone Company; The Columbia Grove Telephone Company; The Nebraska Central Telephone Company; The Orwell Telephone Company; Waitsfield-Fayston Telephone Company; Yates City Telephone Company; and YCOM Networks, Inc. See Rural ILECs Comments on the IRFA at 1 & Attachment A.

[7] Rural ILECs Comments on the IRFA at 1–2.

[8] *Id.* at 2.

[9] 5 U.S.C. 604(a)(3).

[10] 5 U.S.C. 601(6).

[11] 5 U.S.C. 601(3) (incorporating by reference the definition of ''small-business concern'' in the Small Business Act, 15 U.S.C. 632). Pursuant to 5 U.S.C. 601(3), the statutory definition of a small business applies ''unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the **Federal Register**.''

[12] 15 U.S.C. 632.

73. We further describe and estimate the number of small entity licensees and regulatees that may be affected by rules adopted pursuant to the *Report and Order*. The most reliable source of information regarding the total numbers of certain common carrier and related providers nationwide, as well as the number of commercial wireless entities, appears to be the data that the Commission publishes in its ''Trends in Telephone Service'' report.[13] The SBA has developed small business size standards for wireline and wireless small businesses within the three commercial census categories of Wired Telecommunications Carriers,[14] Paging,[15] and Cellular and Other Wireless Telecommunications.[16] Under these categories, a business is small if it has 1,500 or fewer employees. Below, using the above size standards and others, we discuss the total estimated numbers of small businesses that might be affected by our actions.

74. We have included small incumbent local exchange carriers in this present RFA analysis. As noted, a ''small business'' under the RFA is one that, *inter alia,* meets the pertinent small business size standard (*e.g.*, a telephone communications business having 1,500 or fewer employees), and ''is not dominant in its field of operation.'' [17] The SBA's Office of Advocacy contends that, for RFA purposes, small incumbent local exchange carriers are not dominant in their field of operation because any such dominance is not ''national'' in scope.[18] We have therefore included small incumbent local exchange carriers in this RFA analysis, although we emphasize that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts.

75. *Wired Telecommunications Carriers.* The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.[19] According to Census Bureau data for 1997, there were 2,225 firms in this category, total, that operated for the entire year.[20] Of this total, 2,201 firms had employment of 999 or fewer employees, and an additional 24 firms had employment of 1,000 employees or more.[21] Thus, under this size standard, the majority of firms can be considered small.

76. *Incumbent Local Exchange Carriers (LECs).* Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[22] According to Commission data,[23] 1,337 carriers have reported that they are engaged in the provision of incumbent local exchange services. Of these 1,337 carriers, an estimated 1,032 have 1,500 or fewer employees and 305 have more than 1,500 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our action.

77. *Competitive Local Exchange Carriers (CLECs), Competitive Access Providers (CAPs), ''Shared-Tenant Service Providers,'' and ''Other Local Service Providers.*'' Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[24] According to Commission data,[25] 609 carriers have reported that they are engaged in the provision of either competitive access provider services or competitive local exchange carrier services. Of these 609 carriers, an estimated 458 have 1,500 or fewer employees and 151 have more than 1,500 employees. In addition, 16 carriers have reported that they are ''Shared-Tenant Service Providers,'' and all 16 are estimated to have 1,500 or fewer employees. In addition, 35 carriers have reported that they are ''Other Local Service Providers.'' Of the 35, an estimated 34 have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, ''Shared-Tenant Service Providers,'' and ''Other Local Service Providers'' are small entities that may be affected by our action.

78. *Interexchange Carriers (IXCs).* Neither the Commission nor the SBA has developed a small business size standard specifically for providers of interexchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[26] According to Commission data,[27] 261 carriers have reported that they are engaged in the provision of interexchange service. Of these, an estimated 223 have 1,500 or fewer employees and 38 have more than 1,500 employees. Consequently, the Commission estimates that the majority of IXCs are small entities that may be affected by our action.

79. *Wireless Service Providers.* The SBA has developed a small business size standard for wireless small businesses within the two separate categories of Paging [28] and Cellular and Other Wireless Telecommunications.[29] Under both SBA categories, a wireless business is small if it has 1,500 or fewer employees. According to the Commission's most recent data,[30] 1,387 companies reported that they were engaged in the provision of wireless service. Of these 1,387 companies, an estimated 945 have 1,500 or fewer employees and 442 have more than 1,500 employees.[31] Consequently, the Commission estimates that most wireless service providers are small

[13] FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, ''Trends in Telephone Service'' at Table 5.3, Page 5–5 (Aug. 2003) (hereinafter ''Trends in Telephone Service''). This source uses data that are current as of December 31, 2001.

[14] 13 CFR 21.201, North American Industry Classification System (NAICS) code 517110.

[15] 13 CFR 121.201, NAICS code 517211.

[16] 13 CFR 121.201, NAICS code 517212.

[17] 15 U.S.C. 632.

[18] Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, FCC (May 27, 1999). The Small Business Act contains a definition of ''small-business concern,'' which the RFA incorporates into its own definition of ''small business.'' *See* 15 U.S.C. 632(a) (Small Business Act); 5 U.S.C. 601(3) (RFA). SBA regulations interpret ''small business concern'' to include the concept of dominance on a national basis. 13 CFR 121.102(b).

[19] 13 CFR 121.201 (1997), NAICS code 513310 (changed to 517110 in October 2002).

[20] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, ''Establishment and Firm Size (Including Legal Form of Organization),'' Table 5, NAICS code 513310 (issued October 2000).

[21] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is ''Firms with 1,000 employees or more.''

[22] 13 CFR 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[23] ''Trends in Telephone Service'' at Table 5.3.

[24] 13 CFR 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[25] ''Trends in Telephone Service'' at Table 5.3.

[26] 13 CFR 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[27] ''Trends in Telephone Service'' at Table 5.3.

[28] 13 CFR 121.201, North American Industry Classification System (NAICS) code 517211.

[29] 13 CFR 121.201, North American Industry Classification System (NAICS) code 517212.

[30] FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, Trends in Telephone Service, Table 5.3, (August 2002).

[31] *Id.*

entities that may be affected by the rules and policies adopted.

80. *Broadband Personal Communications Service.* The broadband Personal Communications Service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission defined ''small entity'' for Blocks C and F as an entity that has average gross revenues of $40 million or less in the three previous calendar years.[32] For Block F, an additional classification for ''very small business'' was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than $15 million for the preceding three calendar years.'' [33] These standards defining ''small entity'' in the context of broadband PCS auctions have been approved by the SBA.[34] No small businesses, within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the Block C auctions. A total of 93 small and very small business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F.[35] On March 23, 1999, the Commission re-auctioned 347 C, D, E, and F Block licenses. There were 48 small business winning bidders. On January 26, 2001, the Commission completed the auction of 422 C and F Broadband PCS licenses in Auction No. 35. Of the 35 winning bidders in this auction, 29 qualified as ''small'' or ''very small'' businesses. Based on this information, the Commission concludes that the number of small broadband PCS licenses would have included the 90 winning C Block bidders, the 93 qualifying bidders in the D, E, and F Block auctions, the 48 winning bidders in the 1999 re-auction, and the 29 winning bidders in the 2001 re-auction, for a total of 260 small entity broadband PCS providers, as defined by the SBA small business size standards and the Commission's auction rules. Consequently, the Commission estimates that 260 broadband PCS providers would have been small entities that could be affected by the rules and policies adopted herein. The results of Auction No. 35, however, were set aside and the licenses previously awarded to NextWave, which had qualified as a small entity, were reinstated. In addition, we note that, as a general matter, the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily represent the number of small businesses currently in service. Also, the Commission does not generally track subsequent business size unless, in the context of assignments or transfers, unjust enrichment issues are implicated.

81. *Narrowband Personal Communications Services.* To date, two auctions of narrowband personal communications services (PCS) licenses have been conducted. For purposes of the two auctions that have already been held, ''small businesses'' were entities with average gross revenues for the prior three calendar years of $40 million or less. Through these auctions, the Commission has awarded a total of 41 licenses, out of which 11 were obtained by small businesses. To ensure meaningful participation of small business entities in future auctions, the Commission has adopted a two-tiered small business size standard in the *Narrowband PCS Second Report and Order.*[36] A ''small business'' is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than $40 million. A ''very small business'' is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than $15 million. The SBA has approved these small business size standards.[37] In the future, the Commission will auction 459 licenses to serve Metropolitan Trading Areas (MTAs) and 408 response channel licenses. There is also one megahertz of narrowband PCS spectrum that has been held in reserve and that the Commission has not yet decided to release for licensing. The Commission cannot predict accurately the number of licenses that will be awarded to small entities in future actions. However, four of the 16 winning bidders in the two previous narrowband PCS auctions were small businesses, as that term was defined under the Commission's Rules. The Commission assumes, for purposes of this analysis that a large portion of the remaining narrowband PCS licenses will be awarded to small entities. The Commission also assumes that at least some small businesses will acquire narrowband PCS licenses by means of the Commission's partitioning and disaggregation rules.

82. *800 MHz and 900 MHz Specialized Mobile Radio Licenses.* The Commission awards ''small entity'' and ''very small entity'' bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than $15 million in each of the three previous calendar years, or that had revenues of no more than $3 million in each of the previous calendar years, respectively.[38] These bidding credits apply to SMR providers in the 800 MHz and 900 MHz bands that either hold geographic area licenses or have obtained extended implementation authorizations. The Commission does not know how many firms provide 800 MHz or 900 MHz geographic area SMR service pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than $15 million. One firm has over $15 million in revenues. The Commission assumes, for purposes here, that all of the remaining existing extended implementation authorizations are held by small entities, as that term is defined by the SBA. The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz SMR bands. There were 60 winning bidders that qualified as small or very small entities in the 900 MHz SMR auctions. Of the 1,020 licenses won in the 900 MHz auction, bidders qualifying as small or very small entities won 263 licenses. In the 800 MHz auction, 38 of the 524 licenses won were won by small and very small entities. In addition, we note that, as a general matter, the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily represent the number of small businesses currently in service. Also, the Commission does not generally track subsequent business size

[32] *See* Amendment of parts 20 and 24 of the Commission's Rules—Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, WT Docket No. 96–59, Report and Order, 61 FR 33859 (July 1, 1996); *see also* 47 CFR 24.720(b).

[33] *See* Amendment of parts 20 and 24 of the Commission's Rules—Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, WT Docket No. 96–59, Report and Order, 61 FR 33859 (July 1, 1996).

[34] *See, e.g.*, Implementation of Section 309(j) of the Communications Act—Competitive Bidding, PP Docket No. 93–253, Fifth Report and Order, 59 FR 37566 (July 22, 1994).

[35] FCC News, Broadband PCS, D, E and F Block Auction Closes, No. 71744 (released January 14, 1997). *See also* Amendment of the Commission's Rules Regarding Installment Payment Financing for Personal Communications Services (PCS) Licenses, WT Docket No. 97–82, Second Report and Order, 62 FR 55348 (Oct. 24,1997).

[36] In the Matter of Amendment of the Commission's Rules to Establish New Personal Communications Services, Narrowband PCS, Docket No. ET 92–100, Docket No. PP 93–253, *Second Report and Order and Second Further Notice of Proposed Rulemaking,* 65 FR 35875 (June 6, 2000).

[37] *See* Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from Aida Alvarez, Administrator, SBA (Dec. 2, 1998).

[38] 47 CFR 90.814(b)(1).

unless, in the context of assignments or transfers, unjust enrichment issues are implicated.

83. *Paging.* The SBA has developed a small business size standard for Paging, which consists of all such firms having 1,500 or fewer employees.[39] According to Census Bureau data for 1997, in this category there was a total of 1,320 firms that operated for the entire year.[40] Of this total, 1,303 firms had employment of 999 or fewer employees, and an additional seventeen firms had employment of 1,000 employees or more.[41] Thus, under this size standard, the majority of firms can be considered small.

84. *Rural Radiotelephone Service.* The Commission has not adopted a size standard for small businesses specific to the Rural Radiotelephone Service.[42] A significant subset of the Rural Radiotelephone Service is the Basic Exchange Telephone Radio System (BETRS).[43] The Commission uses the SBA's small business size standard applicable to ''Cellular and Other Wireless Telecommunications,'' *i.e.*, an entity employing no more than 1,500 persons.[44] There are approximately 1,000 licensees in the Rural Radiotelephone Service, and the Commission estimates that there are 1,000 or fewer small entity licensees in the Rural Radiotelephone Service that may be affected by the rules and policies adopted herein.

85. *Cable and Other Program Distribution.*[45] This category includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems, and subscription television services. According to Census Bureau data for 1997, there were a total of 1,311 firms in this category, total, that had operated for the entire year.[46] Of this total, 1,180 firms had annual receipts of under $10 million and an additional 52 firms had receipts of $10 million or more but less than $25 million. Consequently, the Commission estimates that the majority of providers in this service category are small businesses that may be affected by the rules and policies adopted.

86. *Cable System Operators (Rate Regulation Standard).* The Commission has developed a size standard for small cable system operators for the purposes of rate regulation. Under the Commission's rules, a ''small cable company'' is one serving fewer than 400,000 subscribers nationwide.[47] Based on our most recent information, we estimate that there were 1439 cable operators that qualified as small cable companies at the end of 1995.[48] Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. The Commission's rules define a ''small system,'' for the purposes of rate regulation, as a cable system with 15,000 or fewer subscribers.[49] The Commission does not request nor does the Commission collect information concerning cable systems serving 15,000 or fewer subscribers and thus is unable to estimate, at this time, the number of small cable systems nationwide.

87. *Cable System Operators (Telecom Act Standard).* The Communications Act of 1934, as amended, also contains a definition of a small cable system operator, which is ''a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed $250,000,000.'' [50] The Commission has determined that there are 61,700,000 subscribers in the United States. Therefore, a cable operator serving fewer than 617,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed $250 million in the aggregate.[51] Based on available data, we find that the number of cable operators serving 617,000 subscribers or less totals approximately 1450.[52] Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed $250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators as defined in the Communications Act of 1934.

88. *Satellite Telecommunications Providers.* The appropriate size standards under SBA rules are for the two broad categories of Satellite Telecommunications and Other Telecommunications. Under both categories, such a business is small if it has $12.5 or less in average annual receipts.[53] For the first category of Satellite Telecommunications, Census Bureau data for 1997 show that there were a total of 324 firms that operated for the entire year.[54] Of this total, 273 firms had annual receipts of under $10 million, and an additional twenty-four firms had receipts of $10 million to $24,999,999. Thus, the majority of Satellite Telecommunications firms can be considered small.

89. *Signaling System 7 (SS7) Providers.* The Commission has not developed a definition of small entities applicable to Signaling System 7 providers. We shall apply the SBA's small business size standard for Other Telecommunications, which identifies as small all such companies having $12.5 million or less in annual receipts.[55] We believe that there are no more than half-a-dozen SS7 providers and doubt that any of them have annual receipts less then $12.5 million. In the IRFA in this proceeding, we assumed that there may be several SS7 providers that are small businesses which could be affected by the proposed rules and requested comment on how many SS7 providers exist and on how many of these are small businesses that may be affected by our proposed rules. No comments provided this information. We conclude that none of these providers are small businesses.

90. *D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities*: The rules adopted in this

[39] 13 CFR 121.201, NAICS code 517211 (changed from 513321 in October 2002).

[40] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, ''Establishment and Firm Size (Including Legal Form of Organization),'' Table 5, NAICS code 513321 (issued October 2000).

[41] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is ''Firms with 1,000 employees or more.''

[42] The service is defined in 47 CFR 22.99 of the Commission's Rules.

[43] BETRS is defined in 47 CFR 22.757 and 22.759 of the Commission's Rules.

[44] 13 CFR 121.201, NAICS code 517212.

[45] 13 CFR 121.201, North American Industry Classification System (NAICS) code 513220 (changed to 517510 in October 2002).

[46] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, ''Establishment and Firm Size (Including Legal Form of Organization)'', Table 4, NAICS code 513220 (issued October 2000).

[47] 47 CFR 76.901(e). The Commission developed this definition based on its determination that a small cable system operator is one with annual revenues of $100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation, Sixth Report and Order and Eleventh Order on Reconsideration*, MM Docket No. 92–266 and 93–215, 10 FCC Rcd 7393 (1995), 60 Fed. Reg. 10534 (February 27, 1995).

[48] Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[49] 47 CFR 76.901(c).

[50] 47 U.S.C. 543(m)(2).

[51] 47 CFR 76.1403(b).

[52] *Cable TV* Investor, *supra* note 48.

[53] 13 CFR 121.201, NAICS codes 517410 and 517910 (changed from 513340 and 513390 in Oct. 2002).

[54] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, ''Establishment and Firm Size (Including Legal Form of Organization),'' Table 4, NAICS code 513340 (issued Oct. 2000).

[55] 13 CFR 121.201, NAICS code 517910.

Report and Order require telecommunications providers to report those outages that meet specified threshold criteria. These criteria are largely determined by the number of end users potentially affected by the outage and the duration of the outage, which generally must be at least 30 minutes. Under the prior rules, which have applied only to wireline carriers and cable television service providers that also provide telecommunications service, only about 200 outage reports per year from all reporting sources combined were filed with the Commission. In the IRFA, we stated that the proposed revisions to the threshold criteria were not expected to alter the number of outage reports filed annually to a significant degree. Nevertheless, the adopted rules do extend the outage reporting requirements to telecommunications providers that are not currently subject to these rules. Thus, in the IRFA we anticipated that more than 200 outage reports will be filed annually, but estimated that the total number of reports from all reporting sources combined will be substantially less than 1,000 annually. We noted then, and find now, that, occasionally, the outage reporting requirements could require the use of professional skills, including legal and engineering expertise. Without more data, the IRFA concluded that we could not accurately estimate the cost of compliance by small telecommunications providers. But irrespective of any of the reporting requirements that were proposed, the IRFA expected that telecommunications providers will track, investigate, and correct all of their service disruptions as an ordinary part of conducting their business operations—and will do so for service disruptions that are considerably smaller than for disruptions that would trigger the proposed reporting criteria. As a consequence, the IRFA tentatively found that in the usual case, the only burden associated with the proposed reporting requirements would be the time required to complete the initial and final reports. The IRFA anticipated that electronic filing using a ''fill in the blank'' template would minimize the amount of time and effort that would be required to comply with the proposed rules. The IFRA sought comment on the types of burdens telecommunications providers would face in complying with the proposed requirements. Entities, especially small entities, were encouraged to quantify the costs and benefits of the proposed reporting requirements. In addition, in our initial analysis pursuant to the Paperwork Reduction Act of 1995, we estimated that the Number of Respondents would be 52, the Estimated Time per Response would be 5 hours, the Frequency of Response would be ''on occasion,'' the Total Annual Burden would be 1,040 hours, and the Total Annual Costs would be $41,600. We sought comment on the PRA, including on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. *See Commission's Rules Concerning Disruptions to Communications*, ET Docket No. 04–35, *Proposed Rule*, FCC 04–30, 69 FR 15761 (March 26, 2004).

91. The Rural ILECs [56] were the only parties to file direct comments on the IRFA. In these comments, they state that our original proposal, which would have required small communications providers to file detailed, initial outage reports within 120 minutes of their discovery that an outage was occurring, would be overly burdensome. They explain that their employees who diagnose outages and then work to repair and restore their communications networks are the same employees who would be called upon to supply the information needed for the initial outage reports and/or to file those reports with the Commission. Therefore, the Rural ILECs conclude that our proposal could compromise their ability to restore service during the critical hours immediately after the onset of an outage. In addition, they state that compliance with the proposed rules may be technically infeasible in situations where faxes cannot be sent and the Internet cannot be accessed. To address these concerns, the Rural ILECs suggest that the Commission exempt those companies that are already subject to state outage reporting requirements. They also suggest that the Commission allow those companies that are not subject to state reporting requirements to report outages orally to the Commission within 24 hours of their discovery of a reportable outage. Taking these comments, as well as the general comments of other parties into account, the Commission, in the *Report and Order*, adopted a modified outage-reporting rule that is more flexible than the one proposed in the *NPRM.* Within 120 minutes of discovering an outage, each reporting entity, whether large or small, will be required to submit to the Commission a Notification that contains only a minimal amount of data, that is, the name of the Reporting Entity; the Date and Time of onset of the outage; a Brief Description of the Problem; the particular Services Affected; the Geographic Area affected by the outage; and a Contact Name and Contact Number by which the Commission's technical staff may contact the reporting entity. We anticipate that reporting entities will ordinarily not need more than 15 minutes to file a notification with the Commission. The more detailed initial report, with which Rural ILECs expressed concern, will not be required to be filed until 72 hours after the outage was discovered. Further, all filings are to be made electronically, thereby minimizing the burden on all reporting entities. But, if a specific outage situation prevents the Notification from being filed electronically or by FAX, other written means of filing (such as the use of a courier) will be acceptable. Thus, we find that our action will enable communications providers to focus on their repair and restoration efforts immediately after onset of the outage. The bare-bones notification that we require will not substantially divert them from these efforts but will alert the Commission to the possibility that a major communications might be occurring. In addition, the alternative, 72-hour time frame for filing initial outage reports is more generous than the 24-hour time frame suggested by the Rural ILECs. Thus, we do not find that the public interest would be served by the Rural ILECs suggestion to permit outage information to be reported orally within 24 hours. The quality of information that would be submitted orally is likely to be less accurate and less uniform than that submitted electronically through the ''fill in the blank'' template which we have adopted. Also, the reporting burden would likely not decrease as a result of oral submissions, because of the speed that e-filing permits and because of the greater likelihood that the Commission would need to ask oral submitters to correct and supplement incorrect and incomplete orally-submitted information.

92. We also do not adopt the Rural ILECs suggestion that we exempt those small, rural companies that are subject to state outage-reporting requirements. We believe that there is a legitimate need for the national, uniform outage-

[56] *See supra* note 6.

reporting system that we adopted and which covers various communications platforms. This system is designed to address the critical need for rapid, full, and accurate information on service disruptions that could affect homeland security, public health and safety, as well as the economic well being of our Nation. Nonetheless, as the Commission, the Department of Homeland Security, and appropriate State authorities gain experience with the outage-reporting system that we are adopting, the Commission and the States may make further refinements in their systems to improve the analytic results that can be gleaned from them and to eliminate any unnecessary duplication. The information collection that we have adopted is necessary to fulfill the Commission's responsibilities for ensuring the reliability and security of the Nation's telecommunications networks and infrastructure, which also serves the public's homeland security needs. We do not find that further accommodations for small businesses could be made that would not be outweighed by the public interest benefits of our present action.

93. We estimate that reporting entities will ordinarily not need more than 15 minutes to file electronically with the Commission the bare-bones Notification that will contain only a minimal amount of data, that is, the name of the Reporting Entity; the Date and Time of onset of the outage; a Brief Description of the Problem; the particular Services Affected; the Geographic Area affected by the outage; and a Contact Name and Contact Number by which the Commission's technical staff may contact the reporting entity. We further estimate that reporting entities will ordinarily not need more than 45 minutes to complete and submit electronically to the Commission the initial report, due within 72 hours of discovery of the outage, that will contain all information then available. Finally, we estimate that reporting entities will ordinarily not need more than 2 hours to complete and submit electronically the final report to the Commission. These time estimates include the actual time needed for data entry and submission but do not include the time taken for data gathering and analysis. Also excluded is idle time (for example, any time in which partially completed information is waiting in an in-box for further review), which we find cannot fairly be counted as a reporting burden. Since most companies routinely collect information on service failures, it is difficult to estimate precisely how much additional time for data gathering and analysis, if any, will be required to comply with the revised rule. In any event, we estimate that for the great majority of outages the total additional time so required will be significantly less than two (2) hours. Thus, the final report will generally not require more than 4 hours in total time. In making all of our time estimates, above, we have taken into account that all filings are to be made electronically, through a ''fill in the blank'' template, thereby minimizing the burden on all reporting entities. In sum, we estimate the total time needed to file all reports pertinent to each outage that meets or exceeds the threshold criteria to be significantly less than 5 hours (the Notification + the Initial Report + Final Report: 15 minutes + 45 minutes + 2 to 4 hours < 5 hours), and most likely little more than 3 hours.

94. Although we anticipate that more than the current amount of 200 outage reports will be filed annually, we estimate that the total number of reports, from all reporting sources combined, will be substantially less than 1,000 annually. Similarly, we anticipate that more than the current number of 17 respondents will file outage reports annually, perhaps an increase of 50%–100%, but we deem it highly unlikely that the number of respondents will increase to more than 52. We note that, occasionally, the outage reporting requirements could require the use of professional skills, including legal and engineering expertise. The commenting parties have not provided any data that would assist us in estimating more accurately estimate the cost of compliance by small telecommunications providers. But irrespective of any of the reporting requirements, we expect that all telecommunications providers (including small ones) will track, investigate, and correct all of their service disruptions as an ordinary part of conducting their business operations—and will do so for service disruptions that are considerably smaller than for disruptions that would trigger the reporting criteria that we propose here. As a consequence, we believe that in the usual case, the only burden associated with the reporting requirements will be the time required to complete the Notification, and the Initial and Final Reports. We anticipate that electronic filing, through the type of illustrative template that we have set forth in Appendix C of the *Report and Order,* should minimize the amount of time and effort that will be required to comply with the rules. In addition, we anticipate that the vast majority of outage reports will by necessitated by outages that meet the general reporting threshold criteria of having a duration of at least 30 minutes and potentially affecting at least 900,000 user-minutes (that is, the mathematical result of multiplying the outage duration expressed in minutes and the number of users potentially affected by the outage meets or exceeds 900,000). We further anticipate that the vast majority of these types of outages will be experienced by large telecommunications providers. Only rarely will providers that are small businesses experience such outages because they are most likely to have a relatively small number of end users that potentially would be affected by any particular outage. Therefore, the outages that are experienced by those providers that are small businesses will most likely fall below the criteria for mandatory reporting and, thus, will not be required to be reported to the Commission. Therefore, such outages will impose minimal reporting burdens on small businesses. Small businesses as a group may experience a few outages yearly that must be reported because those outages meet the reporting criteria for outages potentially affecting 911/E911 services or other special offices and facilities. Large businesses face the same reporting criteria and burden. Because of the critical nature of 911/E911 and other special offices and facilities, it is a national priority that all telecommunications providers, including those that are small businesses, comply with these particular requirements.

95. *E. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered:* In order to minimize any adverse impact of the modified outage-reporting rule on small entities, we have provided for the electronic filing of reports through use of a ''fill in the blank'' template and have adopted a three-step reporting process that is less burdensome than the two-step process originally proposed. We had proposed to require that, 120 minutes after discovering an outage, reporting entities file an Initial Report that would include all information about the outage then available. Instead, we have considered comments that indicate that this proposal could interfere with the ability of reporting entities, especially small businesses, to focus on repair and restorative efforts. Therefore, we have adopted a more flexible requirement, by which reporting entities, 120 minutes after discovering an outage, will file electronically a bare-bones Notification that will contain only a minimal amount

of data, that is, the name of the Reporting Entity; the Date and Time of onset of the outage; a Brief Description of the Problem; the particular Services Affected; the Geographic Area affected by the outage; and a Contact Name and Contact Number by which the Commission's technical staff may contact the reporting entity. The time frame for filing electronically the Initial Report, which is to contain all information then available, has been revised to be 72 hours after the outage's discovery. This is less burdensome to reporting entities because all or most of the diagnostic and restorative work will have typically been completed by this time, and, thus, the reporting requirement will not significantly interfere with such efforts. Moreover, because all or most of the information will already be known, it is unlikely that very much time will be needed to complete either the Initial or the Final Report. The Final Report, as we had proposed, will be due 30 days after discovery of the outage; no commenting party has objected to this time frame.

96. In taking this action, we have considered but reject the Rural ILECs suggestion that, instead of requiring the filing of the Initial Report by the 120-minute mark, we allow small entities to submit outage information orally at the 24-hour mark. The requirements that we adopt will allow all entities 72 hours to file the Initial Report electronically. At the 120-minute mark, we are requiring only that a bare-bones Notification be submitted. We also reject Rural ILECs suggestion that we exempt those small entities to which State outage-reporting requirements apply. We believe that there is a legitimate need for the national, uniform outage-reporting system that we have adopted and which covers various communications platforms. This system is designed to address the critical need for rapid, full, and accurate information on service disruptions that could affect homeland security, public health and safety, as well as the economic well being of our Nation. Nonetheless, as the Commission, the Department of Homeland Security, and appropriate State authorities gain experience with the outage-reporting system that we adopting, the Commission and the States may make further refinements in their systems to improve the analytic results that can be gleaned from them and to eliminate any unnecessary duplication. In any event, we believe that the requirements that we adopt will adequately address the concerns of small entities as well as provide more timely warning of outages and, ultimately, more accurate, complete, and uniform information that will of great use to the Commission, the Department of Homeland Security, and technical expert groups in assessing and improving network reliability and in addressing homeland security concerns.

97. Our action also takes into account comments filed by the BloostonLaw Paging Group, which states our proposed metric of 900,000 user-minutes would place onerous burdens on the paging industry and that almost all paging outages involve only a particular transmitter or a small cluster of transmitters and the provider's entire system. As a result, we adopted rules that are a modified version of our original proposal, which would have required the reporting of all paging outages, even ones that involve only a single transmitter, that meet the threshold. Instead, we have decided to apply the 900,000 user-minute criterion to outages of the switch only. Therefore, we anticipate that very few paging outages will be reportable. The BloostonLaw Paging Group also states that the proposed 120-minute time frame for filing Initial Reports would cause providers to divert resources from restoration efforts and/or to hire additional personnel. We addressed these concerns, above, where we referenced the comments of the Rural ILECs, and have adopted a more flexible, three-step process that adequately addresses and mitigates these concerns and, we find, would not impose a significant financial burden on paging providers. Thus, we reject the suggestions of BloostonLaw Paging Group that we limit the contemporaneous outage-reporting requirements for paging providers to those outages whose origins appear ''suspicious'' and require reports for ''non-suspicious'' outages to be filed semi-annually or less frequently. We do not find that it is always immediately evident whether or not an outage has a ''suspicious'' origin.

98. Finally, we reject the suggestions of BloostonLaw Rural Carriers that, in order to reduce reporting burdens, outage reporting by small (*i.e.*, Tier III) wireless carriers should be on a voluntary basis or an annual or semi-annual basis, with contemporaneous reporting required only for outages of ''suspicious'' origin. We believe that the modifications we have adopted are sufficient to address and mitigate the concerns of small entities while ensuring that the Commission, DHS, and technical expert groups receive the essential information. We also disagree, for reasons explained in the text of the *Report and Order*, with their argument that the concentration ratio of 8 that we have adopted would, for rural wireless providers, result in an overstatement of the number of users potentially affected by an outage.[57]

99. *F. Federal Rules that Might Duplicate, Overlap, or Conflict with the Adopted Rules.* None. We have separately adopted requirements, including information disclosure requirements, concerning aspects of spacecraft operations that may affect the ability of operators to complete appropriate satellite end-of-life procedures. *See In the Matter of Mitigation of Orbital Debris*, IB Docket No. 02–54, *Second Report and Order*, FCC 04–130, released June 21, 2004. Also, part 25 of the Commission's Rules provides that certain satellite licensees file annual reports that contain some information on outages and that Mobile-Satellite Service (MSS) Ancillary Terrestrial Component (ATC) licensees report certain outages within 10 days of their occurrence. These rules were adopted to provide the Commission with information necessary to assess the commercial and technical development of satellite services, including the efficiency of spectrum utilization by satellite licensees, and, in the case of MSS ATC licensees, to ensure that the terrestrial use of spectrum remains ancillary to satellite use. In the *Notice of Proposed Rulemaking*, we tentatively concluded that our proposed additional reporting requirements were necessary so that we can more rapidly acquire information that would be more useful in achieving our objectives of increasing reliability and security in satellite communications. We sought comment on these proposals and on alternative ways to accomplish our objectives in this proceeding while minimizing any duplication of reporting requirements or unnecessary burdens on satellite communications providers. The record in this proceeding does not show that the rules adopted in the *Report and Order* substantially duplicate the adopted rules. To the contrary, we find that the adopted rules are needed to fulfill the Commission's responsibilities with respect to public safety, national security and to assist the Department of Homeland Security with regard to the nation's telecommunications infrastructure within the homeland security context.

Ordering Clauses

100. Pursuant to the authority contained in Sections 1, 4(i)–(j), 4(k), 4(o), 218, 219, 230, 256, 301, 302(a), 303(f), 303(g), 303(j), 303(r), 403,

[57] *See Report and Order, supra*, at ¶ 107–113.

621(b)(3), and 621(d) of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i)–(j), 154(k), 154(o), 218, 219, 230, 256, 301, 302(a), 303(f), 303(g), 303(j), 303(r), 403, 621(b)(3), and 621(d), and in Section 1704 of the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1998, 44 U.S.C. 3504, that the *Report and Order* and Further Notice of Proposed Rule Making *is adopted,* and parts 0, 4, and 63 of the Commission's Rules *are amended* as specified in the rule changes, effective January 3, 2005, except for part 4 and the amendments to § 63.100, which contains information collection requirements that have not been approved by the Office of Management and Budget. The Federal Communications Commission will publish a document in the **Federal Register** announcing the effective date. Written comments by the public on the modified information collection requirements must be submitted on or before January 3, 2005.

101. The motion for acceptance of late-filed comments filed by the Department of Homeland Security on June 2, 2004, and the motions for acceptance of late-filed reply comments filed by the Department of Homeland Security and CCS Partners, LLC on June 29 and July 6, 2004, respectively, ARE GRANTED for good cause shown.

102. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of the *Report and Order* and Further Notice of Proposed Rule Making, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects

47 CFR Part 0

Organization and functions (Government agencies), Reporting and record-keeping requirements.

47 CFR Part 4

Airports, Communications common carriers, Communications equipment, Disruptions to Communications, Network Outages, Reporting and recordkeeping requirements, Telecommunications.

47 CFR Part 63

Communications common carriers, Reporting and recordkeeping requirements.

Federal Communications Commission

William F. Caton,

Deputy Secretary.

Rule Changes

■ For the reasons discussed in the preamble, the Federal Communications Commission amends parts 0 and 63 and adds part 4 of chapter I of title 47 of the CFR as follows:

PART 0—COMMISSION ORGANIZATION

■ 1. The authority citation for part 0 continues to read as follows:

Authority: Sec. 5, 48 Stat. 1068, as amended; 47 U.S.C. 155, 255, unless otherwise noted.

■ 2. Section 0.31 is amended by revising paragraph (i) to read as follows:

§ 0.31 Functions of the Office.

* * * * *

(i) To administer parts 2, 4, 5, 15, and 18 of this chapter, including licensing, recordkeeping, rule making, and revising the filing system and template used for compliance with the Commission's communications disruption reporting requirements.

* * * * *

■ 3. Section 0.241 is amended by revising paragraph (a) introductory text and paragraphs (a)(1) and (b) through (g) and by adding paragraphs (h) and (i) to read as follows:

§ 0.241 Authority delegated.

(a) The performance of functions and activities described in § 0.31 is delegated to the Chief of the Office of Engineering and Technology: *Provided,* that the following matters shall be referred to the Commission en banc for disposition:

(1) Notices of proposed rulemaking and of inquiry and final orders in rulemaking proceedings, inquiry proceedings and non-editorial orders making changes, except that the Chief of the Office of Engineering and Technology is delegated authority to make the revisions to the filing system and template necessary to improve the efficiency of reporting and to reduce, where reasonably possible, the time for providers to prepare, and for the Commission staff to review, the communications disruption reports required to be filed pursuant to part 4 of this chapter.

* * * * *

(b) The Chief of the Office of Engineering and Technology is delegated authority to administer the Equipment Authorization program as described in part 2 of this chapter.

(c) The Chief of the Office of Engineering and Technology is delegated authority to administer the Experimental Radio licensing program pursuant to part 5 of this chapter.

(d) The Chief of the Office of Engineering and Technology is delegated authority to administer the communications disruption reporting requirements that are contained in part 4 of this chapter and to revise the filing system and template used for the submission of such reports.

(e) The Chief of the Office of Engineering and Technology is delegated authority to examine all applications for certification (approval) of subscription television technical systems as acceptable for use under a subscription television authorization as provided for in this chapter, to notify the applicant that an examination of the certified technical information and data submitted in accordance with the provisions of this chapter indicates that the system does or does not appear to be acceptable for authorization as a subscription television system. This delegation shall be exercised in consultation with the Chief, Media Bureau.

(f) The Chief of the Office of Engineering and Technology is authorized to dismiss or deny petitions for rulemaking which are repetitive or moot or which for other reasons plainly do not warrant consideration by the Commission.

(g) The Chief of the Office of Engineering and Technology is authorized to enter into agreements with the National Institute of Standards and Technology and other accreditation bodies to perform accreditation of test laboratories pursuant to § 2.948(d) of this chapter. In addition, the Chief is authorized to make determinations regarding the continued acceptability of individual accrediting organizations and accredited laboratories.

(h) The Chief of the Office of Engineering and Technology is delegated authority to enter into agreements with the National Institute of Standards and Technology to perform accreditation of Telecommunication Certification Bodies (TCBs) pursuant to §§ 2.960 and 2.962 of this chapter. In addition, the Chief is delegated authority to develop specific methods that will be used to accredit TCBs, to designate TCBs, to make determinations regarding the continued acceptability of individual TCBs, and to develop procedures that TCBs will use for performing post-market surveillance.

(i) The Chief of the Office of Engineering and Technology is delegated authority to make

nonsubstantive, editorial revisions to the Commission's rules and regulations contained in parts 2, 4, 5, 15, and 18 of this chapter.

■ 4. Part 4 is added to read as follows:

PART 4—DISRUPTIONS TO COMMUNICATIONS

General

Sec.
4.1 Scope, basis and purpose.
4.2 Availability of reports filed under this part.

Reporting Requirements for Disruptions to Communications

4.3 Communications providers covered by the requirements of this part.
4.5 Definitions of outage, special offices and facilities, and 911 special facilities.
4.7 Definitions of metrics used to determine the general outage-reporting threshold criteria.
4.9 Outage reporting requirements—threshold criteria.
4.11 Notification and initial and final communications outage reports that must be filed by communications providers.
4.13 Reports by the National Communications System (NCS) and by special offices and facilities, and related responsibilities of communications providers.

Authority: 47 U.S.C. 151, 154(i), 154(j), 154(o), 218, 219, 230, 256, 301, 302(a), 303(f), 303(g), 303(j), 303(r), 403, 621(b)(3), and 621(d), unless otherwise noted.

General

§ 4.1 Scope, basis and purpose.

In this part, the Federal Communications Commission is setting forth requirements pertinent to the reporting of disruptions to communications and to the reliability and security of communications infrastructures.

§ 4.2 Availability of reports filed under this part.

Reports filed under this part will be presumed to be confidential. Public access to reports filed under this part may be sought only pursuant to the procedures set forth in 47 CFR § 0.461. Notice of any requests for inspection of outage reports will be provided pursuant to 47 CFR 0.461(d)(3).

Reporting Requirements for Disruptions to Communications

§ 4.3 Communications providers covered by the requirements of this part.

(a) *Cable communications providers* are cable service providers that also provide circuit-switched telephony. Also included are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering telephony.

(b) *Communications provider* is an entity that provides for a fee to one or more unaffiliated entities, by radio, wire, cable, satellite, and/or lightguide: two-way voice and/or data communications, paging service, and/or SS7 communications.

(c) *IXC or LEC tandem facilities* refer to tandem switches (or their equivalents) and interoffice facilities used in the provision of interexchange or local exchange communications.

(d) *Satellite communications providers* use space stations as a means of providing the public with communications, such as telephony and paging. Also included are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications. ''Satellite operators'' refer to entities that operate space stations but do not necessarily provide communications services directly to end users.

(e) *Signaling System 7 (SS7)* is a signaling system used to control telecommunications networks. It is frequently used to ''set up,'' process, control, and terminate circuit-switched telecommunications, including but not limited to domestic and international telephone calls (irrespective of whether the call is wholly or in part wireless, wireline, local, long distance, or is carried over cable or satellite infrastructure), SMS text messaging services, 8XX number type services, local number portability, VoIP signaling gateway services, 555 number type services, and most paging services. For purposes of this rule part, SS7 refers to both the SS7 protocol and the packet networks through which signaling information is transported and switched or routed. It includes future modifications to the existing SS7 architecture that will provide the functional equivalency of the SS7 services and network elements that exist as of August 4, 2004. SS7 communications providers are subject to the provisions of this part 4 regardless of whether or not they provide service directly to end users. Also subject to part 4 of the Commission's rules are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the SS7 provider in offering SS7 communications.

(f) *Wireless service providers* include Commercial Mobile Radio Service communications providers that use cellular architecture and CMRS paging providers. In particular, they include Cellular Radio Telephone Service (part 22 of the Commission's Rules) providers; Personal Communications Service (PCS) (part 24) providers; those Special Mobile Radio Service (part 90) providers that meet the definition of ''covered CMRS'' providers pursuant to §§ 20.18(a), 52.21, and 52.31 of the Commission's rules, those private paging (part 90) providers that are treated as CMRS providers (*see* § 20.9 of this chapter); and narrowband PCS providers (part 24) of this chapter. Also included are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications.

(g) *Wireline communications providers* offer terrestrial communications through direct connectivity, predominantly by wire, coaxial cable, or optical fiber, between the serving central office (as defined in the appendix to part 36 of this chapter) and end user location(s). Also included are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications.

(h) *Exclusion of equipment manufacturers or vendors.* Excluded from the requirements of this part 4 are those equipment manufacturers or vendors that do not maintain or provide communications networks or services used by communications providers in offering communications.

§ 4.5 Definitions of outage, special offices and facilities, and 911 special facilities.

(a) *Outage* is defined as a significant degradation in the ability of an end user to establish and maintain a channel of communications as a result of failure or degradation in the performance of a communications provider's network.

(b) *Special offices and facilities* are defined as major military installations, key government facilities, nuclear power plants, and those airports that are listed as current primary (PR), commercial service (CM), and reliever (RL) airports in the FAA's National Plan of Integrated Airports Systems (NPIAS) (as issued at least one calendar year prior to the outage). The member agencies of the National Communications System (NCS) will determine which of their locations are ''major military installations'' and ''key government facilities.'' 911 special facilities are addressed separately in paragraph (e) of this section.

(c) All outages that potentially affect communications for at least 30 minutes with any airport that qualifies as a ''special office and facility'' pursuant to the preceding paragraph shall be

reported in accordance with the provisions of §§ 4.11 and 4.13.

(d) A mission-affecting outage is defined as an outage that is deemed critical to national security/emergency preparedness (NS/EP) operations of the affected facility by the National Communications System member agency operating the affected facility.

(e) An outage that potentially affects a 911 special facility occurs whenever:

(1) There is a loss of communications to PSAP(s) potentially affecting at least 900,000 user-minutes and: The failure is neither at the PSAP(s) nor on the premises of the PSAP(s); no reroute for all end users was available; and the outage lasts 30 minutes or more; or

(2) There is a loss of 911 call processing capabilities in one or more E–911 tandems/selective routers for at least 30 minutes duration; or

(3) One or more end-office or MSC switches or host/remote clusters is isolated from 911 service for at least 30 minutes and potentially affects at least 900,000 user-minutes; or

(4) There is a loss of ANI/ALI (associated name and location information) and/or a failure of location determination equipment, including Phase II equipment, for at least 30 minutes and potentially affecting at least 900,000 user-minutes (provided that the ANI/ALI or location determination equipment was then currently deployed and in use, and the failure is neither at the PSAP(s) or on the premises of the PSAP(s)).

§ 4.7 Definitions of metrics used to determine the general outage-reporting threshold criteria.

(a) *Administrative numbers* are defined as the telephone numbers used by communications providers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards.

(b) *Assigned numbers* are defined as the telephone numbers working in the Public Switched Telephone Network under an agreement such as a contract or tariff at the request of specific end users or customers for their use. This excludes numbers that are not yet working but have a service order pending.

(c) *Assigned telephone number* minutes are defined as the mathematical result of multiplying the duration of an outage, expressed in minutes, by the sum of the number of assigned numbers (defined in paragraph (b) of this section) potentially affected by the outage and the number of administrative numbers (defined in paragraph (a) of this section) potentially affected by the outage. ''Assigned telephone number minutes'' can alternatively be calculated as the mathematical result of multiplying the duration of an outage, expressed in minutes, by the number of working telephone numbers potentially affected by the outage, where working telephone numbers are defined as the telephone numbers, including DID numbers, working immediately prior to the outage.

(d) *DS3 minutes* are defined as the mathematical result of multiplying the duration of an outage, expressed in minutes, by the number of previously operating DS3 circuits that were affected by the outage.

(e) *User minutes* are defined as:

(1) Assigned telephone number minutes (as defined in paragraph (c) of this section), for telephony and for those paging networks in which each individual user is assigned a telephone number;

(2) The mathematical result of multiplying the duration of an outage, expressed in minutes, by the number of end users potentially affected by the outage, for all other forms of communications.

(f) *Working telephone numbers* are defined to be the sum of all telephone numbers that can originate, or terminate telecommunications. This includes, for example, all working telephone numbers on the customer's side of a PBX, or Centrex, or similar arrangement.

§ 4.9 Outage reporting requirements—threshold criteria.

(a) *Cable.* All cable communications providers shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes duration that:

(1) Potentially affects at least 900,000 user minutes of telephony service;

(2) Affects at least 1,350 DS3 minutes;

(3) Potentially affects any special offices and facilities (in accordance with paragraphs (a) through (d) of § 4.5); or

(4) Potentially affects a 911 special facility (as defined in paragraph (e) of § 4.5), in which case they also shall notify, as soon as possible by telephone or other electronic means, any official who has been designated by the management of the affected 911 facility as the provider's contact person for communications outages at that facility, and they shall convey to that person all available information that may be useful to the management of the affected facility in mitigating the effects of the outage on callers to that facility. (DS3 minutes and user minutes are defined in paragraphs (d) and (e) of § 4.7.) Not later than 72 hours after discovering the outage, the provider shall submit electronically an Initial Communications Outage Report to the Commission. Not later than thirty days after discovering the outage, the provider shall submit electronically a Final Communications Outage Report to the Commission. The Notification and the Initial and Final reports shall comply with all of the requirements of § 4.11.

(b) *IXC or LEC tandem facilities.* In the case of IXC or LEC tandem facilities, providers must, if technically possible, use real-time blocked calls to determine whether criteria for reporting an outage have been reached. Providers must report IXC and LEC tandem outages of at least 30 minutes duration in which at least 90,000 calls are blocked or at least 1,350 DS3-minutes are lost. For interoffice facilities which handle traffic in both directions and for which blocked call information is available in one direction only, the total number of blocked calls shall be estimated as twice the number of blocked calls determined for the available direction. Providers may use historic carried call load data for the same day(s) of the week and the same time(s) of day as the outage, and for a time interval not older than 90 days preceding the onset of the outage, to estimate blocked calls whenever it is not possible to obtain real-time blocked call counts. When using historic data, providers must report incidents where at least 30,000 calls would have been carried during a time interval with the same duration of the outage. (DS3 minutes are defined in paragraph (d) of § 4.7.) In situations where, for whatever reason, real-time and historic carried call load data are unavailable to the provider, even after a detailed investigation, the provider must determine the carried call load based on data obtained in the time interval between the onset of the outage and the due date for the final report; this data must cover the same day of the week, the same time of day, and the same duration as the outage. Justification that such data accurately estimates the traffic that would have been carried at the time of the outage had the outage not occurred must be available on request. If carried call load data cannot be obtained through any of the methods described, for whatever reason, then the provider shall report the outage.

(c) *Satellite.* (1) All satellite operators shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise

utilize, of an outage of at least 30 minutes duration that manifests itself as a failure of any of the following key system elements: One or more satellite transponders, satellite beams, inter-satellite links, or entire satellites. In addition, all Mobile-Satellite Service (''MSS'') satellite operators shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, of an outage of at least 30 minutes duration that manifests itself as a failure of any gateway earth station, except in the case where other earth stations at the gateway location are used to continue gateway operations within 30 minutes of the onset of the failure.

(2) All satellite communications providers shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes duration that manifests itself as:

(i) A loss of complete accessibility to at least one satellite or transponder;

(ii) A loss of a satellite communications link that potentially affects at least 900,000 user-minutes (as defined in § 4.7(d)) of either telephony service or paging service;

(iii) Potentially affecting any special offices and facilities (in accordance with paragraphs (a) through (d) of § 4.5) other than airports; or

(iv) Potentially affecting a 911 special facility (as defined in (e) of § 4.5), in which case they also shall notify, as soon as possible by telephone or other electronic means, any official who has been designated by the management of the affected 911 facility as the provider's contact person for communications outages at that facility, and they shall convey to that person all available information that may be useful to the management of the affected facility in mitigating the effects of the outage on callers to that facility.

(3) Not later than 72 hours after discovering the outage, the operator and/or provider shall submit electronically an Initial Communications Outage Report to the Commission. Not later than thirty days after discovering the outage, the operator and/or provider shall submit electronically a Final Communications Outage Report to the Commission.

(4) The Notification and the Initial and Final reports shall comply with all of the requirements of § 4.11.

(5) Excluded from these outage-reporting requirements are those satellites, satellite beams, inter-satellite links, MSS gateway earth stations, satellite networks, and transponders that are used exclusively for intra-corporate or intra-organizational private telecommunications networks, for the one-way distribution of video or audio programming, or for other non-covered services (that is, when they are never used to carry common carrier voice or paging communications).

(d) *Signaling system 7.* Signaling System 7 (SS7) providers shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize an outage of at least 30 minutes duration that is manifested as the generation of at least 90,000 blocked calls based on real-time traffic data or at least 30,000 lost calls based on historic carried loads. In cases where a third-party SS7 provider cannot directly estimate the number of blocked calls, the third-party SS7 provider shall use 500,000 real-time lost MTP messages as a surrogate for 90,000 real-time blocked calls, or 167,000 lost MTP messages on a historical basis as a surrogate for 30,000 lost calls based on historic carried loads. Historic carried load data or the number of lost MTP messages on a historical basis shall be for the same day(s) of the week and the same time(s) of day as the outage, and for a time interval not older than 90 days preceding the onset of the outage. In situations where, for whatever reason, real-time and historic data are unavailable to the provider, even after a detailed investigation, the provider must determine the carried load based on data obtained in the time interval between the onset of the outage and the due date for the final report; this data must cover the same day of the week and the same time of day as the outage. If this cannot be done, for whatever reason, the outage must be reported. Justification that such data accurately estimates the traffic that would have been carried at the time of the outage had the outage not occurred must be available on request. Finally, whenever a pair of STPs serving any communications provider becomes isolated from a pair of interconnected STPs that serve any other communications provider, for at least 30 minutes duration, each of these communications providers shall submit electronically a Notification to the Commission within 120 minutes of discovering such outage. Not later than 72 hours after discovering the outage, the provider(s) shall submit electronically an Initial Communications Outage Report to the Commission. Not later than thirty days after discovering the outage, the provider(s) shall submit electronically a Final Communications Outage Report to the Commission. The Notification and the Initial and Final reports shall comply with all of the requirements of § 4.11.

(e) *Wireless.* All wireless service providers shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes duration:

(1) Of a Mobile Switching Center (MSC);

(2) That potentially affects at least 900,000 user minutes of either telephony and associated data (2nd generation or lower) service or paging service;

(3) That affects at least 1,350 DS3 minutes;

(4) That potentially affects any special offices and facilities (in accordance with paragraphs (a) through (d) of § 4.5) other than airports through direct service facility agreements; or

(5) That potentially affects a 911 special facility (as defined in (e) of § 4.5), in which case they also shall notify, as soon as possible by telephone or other electronic means, any official who has been designated by the management of the affected 911 facility as the provider's contact person for communications outages at that facility, and they shall convey to that person all available information that may be useful to the management of the affected facility in mitigating the effects of the outage on callers to that facility. (DS3 minutes and user minutes are defined in paragraphs (d) and (e) of § 4.7.) In determining the number of users potentially affected by a failure of a switch, a concentration ratio of 8 shall be applied. For providers of paging service solely, however, the following outage criteria shall apply instead of those in paragraphs (b)(1) through (b)(3) of this section. Notification must be submitted if the failure of a switch for at least 30 minutes duration potentially affects at least 900,000 user-minutes. Not later than 72 hours after discovering the outage, the provider shall submit electronically an Initial Communications Outage Report to the Commission. Not later than thirty days after discovering the outage, the provider shall submit electronically a Final Communications Outage Report to the Commission. The Notification and the Initial and Final reports shall comply with all of the requirements of § 4.11.

(f) *Wireline.* All wireline communications providers shall submit electronically a Notification to the Commission within 120 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes duration that:

(1) Potentially affects at least 900,000 user minutes of either telephony or paging;

(2) Affects at least 1,350 DS3 minutes;

(3) Potentially affects any special offices and facilities (in accordance with paragraphs (a) through (d) of § 4.5); or

(4) Potentially affects a 911 special facility (as defined in paragraph (e) of § 4.5), in which case they also shall notify, as soon as possible by telephone or other electronic means, any official who has been designated by the management of the affected 911 facility as the provider's contact person for communications outages at that facility, and the provider shall convey to that person all available information that may be useful to the management of the affected facility in mitigating the effects of the outage on efforts to communicate with that facility. (DS3 minutes and user minutes are defined in paragraphs (d) and (e) of § 4.7.) Not later than 72 hours after discovering the outage, the provider shall submit electronically an Initial Communications Outage Report to the Commission. Not later than thirty days after discovering the outage, the provider shall submit electronically a Final Communications Outage Report to the Commission. The Notification and the Initial and Final reports shall comply with all of the requirements of § 4.11.

§ 4.11 Notification and initial and final communications outage reports that must be filed by communications providers.

Notification and Initial and Final Communications Outage Reports shall be submitted by a person authorized by the communications provider to submit such reports to the Commission. The person submitting the Final report to the Commission shall also be authorized by the provider to legally bind the provider to the truth, completeness, and accuracy of the information contained in the report. Each Final report shall be attested by the person submitting the report that he/she has read the report prior to submitting it and on oath deposes and states that the information contained therein is true, correct, and accurate to the best of his/her knowledge and belief and that the communications provider on oath deposes and states that this information is true, complete, and accurate. The Notification shall provide: the name of the reporting entity; the date and time of onset of the outage; a brief description of the problem; service affects; the geographic area affected by the outage; and a contact name and contact telephone number by which the Commission's technical staff may contact the reporting entity. The Initial and Final Reports shall contain the information required in this part 4. The Initial report shall contain all pertinent information then available on the outage and shall be submitted in good faith. The Final report shall contain all pertinent information on the outage, including any information that was not contained in, or that has changed from that provided in, the Initial report. The Notification and the Initial and Final Communications Outage Reports are to be submitted electronically to the Commission.

''Submitted electronically'' refers to submission of the information using Commission-approved Web-based outage report templates. If there are technical impediments to using the Web-based system during the Notification stage, then a written Notification to the Commission by email, FAX, or courier may be used; such Notification shall contain the information required. All hand-deliverd Notifications and Initial and Final Communications Outage Reports, shall be addressed to the Federal Communications Commission, The Office of Secretary, Attention: Edmond J. Thomas, Chief, Office of Engineering & Technology, 236 Massachusetts Ave., NE., Suite 110, Washington, DC 20002. Electronic filing shall be effectuated in accordance with procedures that are specified by the Commission by public notice.

§ 4.13 Reports by the National Communications System (NCS) and by special offices and facilities, and related responsibilities of communications providers.

Reports by the National Communications System (NCS) and by special offices and facilities (other than 911 special offices and facilities) of outages potentially affecting them (see paragraphs (a) through (d) of § 4.5) shall be made according to the following procedures:

(a) When there is a mission-affecting outage, the affected facility will report the outage to the NCS and call the communications provider in order to determine if the outage is expected to last 30 minutes. If the outage is not expected to, and does not, last 30 minutes, it will not be reported to the Commission. If it is expected to last 30 minutes or does last 30 minutes, the NCS, on the advice of the affected special facility and in the exercise of its judgment, will either:

(1) Forward a report of the outage to the Commission, supplying the information for initial reports affecting special facilities specified in this section of the Commission's Rules;

(2) Forward a report of the outage to the Commission, designating the outage as one affecting ''special facilities,'' but reporting it at a level of detail that precludes identification of the particular facility involved; or

(3) Hold the report at the NCS due to the critical nature of the application.

(b) If there is to be a report to the Commission, an electronic, written, or oral report will be given by the NCS within 120 minutes of an outage to the Commission's Duty Officer, on duty 24 hours a day in the FCC's Communications and Crisis Management Center in Washington, DC. Notification may be served at such other facility designated by the Commission by public notice or (at the time of the emergency) by public announcement only if there is a telephone outage or similar emergency in Washington, DC. If the report is oral, it is to be followed by an electronic or written report not later than the next business day. Those providers whose service failures are in any way responsible for the outage must consult and cooperate in good faith with NCS upon its request for information.

(c) Additionally, if there is to be a report to the Commission, the communications provider will provide a written report to the NCS, supplying the information for final reports for special facilities required by this section of the Commission's rules. The communications provider's final report to the NCS will be filed within 28 days after the outage, allowing the NCS to then file the report with the Commission within 30 days after the outage. If the outage is reportable as described in paragraph (b) of this section, and the NCS determines that the final report can be presented to the Commission without jeopardizing matters of national security or emergency preparedness, the NCS will forward the report as provided in either paragraphs (a)(1) or (a)(2) of this section to the Commission.

PART 63—EXTENSION OF LINES, NEW LINES, AND DISCONTINUANCE, REDUCTION, OUTAGE AND IMPAIRMENT OF SERVICE BY COMMON CARRIERS; AND GRANTS OF RECOGNIZED PRIVATE OPERATING AGENCY STATUS

■ 5. The authority citation for part 63 continues to read as follows:

Authority: Sections 1, 4(i), 4(j), 10, 11, 201–205, 214, 218, 403 and 651 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), 154(j), 160, 161, 201–205, 214, 218, 403, and 571, unless otherwise noted.

■ 6. Section 63.100 is revised to read as follows:

§ 63.100 Notification of service outage.

The requirements for communications providers concerning communications disruptions and the filing of outage reports are set forth in part 4 of this chapter.

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