Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

FCC 94-288

In the Matter of	)	
	)	
Amendment of Part 73,	)	FO Docket 91-301
Subpart G, of the Commission's	)	FO Docket 91-171
Rules Regarding the	)	
Emergency Broadcast System	)	

REPORT AND ORDER AND
FURTHER NOTICE OF PROPOSED RULE MAKING

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Comments Due: February 22, 1995

Reply Comments Due: March 24, 1995

By the Commission:

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I. SUMMARY

1. By this action, we establish the Emergency Alert System (EAS), which will replace the existing Emergency Broadcast System (EBS). We require broadcast stations and cable systems to install and operate new equipment for national alerts while relaxing some requirements for noncommercial educational Class D FM stations and low power television stations. Satellite, Direct Broadcast Satellite (DBS), telephone and cellular carriers, and other service providers are encouraged to voluntarily participate. A standard protocol and new digital codes are adopted that will facilitate different technologies using the new system. Finally, procedures are streamlined so that more participants can work together effectively during emergencies.

2. In a Further Notice of Proposed Rule Making ("FNPRM") we seek comment on how services such as the Multipoint Distribution Service (MDS)[1], Satellite Master Antenna Television (SMATV), and Video Dial Tone should participate in the new EAS. We also seek further comment on whether we should waive our EAS requirements for a defined class of "small" cable systems.

II. BACKGROUND

3. In 1951 President Harry S Truman established CONELRAD (Control of Electromagnetic Radiation) as the first national alerting system. Under CONELRAD, AM radio stations were required to broadcast only on 640 or 1240 kHz during an emergency alert to the public so that enemy missiles could not use transmissions from broadcast stations as a guide for their targets.[2] By the early 1960's the development of missile guidance systems made the two channel limitation obsolete.

4. In 1963 President John F. Kennedy established the Emergency Broadcast System and allowed stations to transmit on their normal frequencies during an emergency. Technical requirements for EBS equipment were developed in the 1960's and included an audio/analog two-tone alerting signal. It was not until the mid-1970's, however, that the Commission amended its rules to replace the CONELRAD signalling technique with the existing EBS audio signal. In 1976, a Memorandum of Understanding (MOU) between the Federal Communications Commission (FCC or Commission), the Federal Emergency Management Agency (FEMA), and the National Oceanic and Atmospheric Administration's

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[1] These frequencies when used to deliver video programming are referred to as "wireless cable" services. See 47 C.F.R. Part 21, Subpart K.

[2] See Executive Order 10312, Dec. 10, 1951. See also FO Docket 91-171, 6 FCC Rcd 4264 (1991).

(NOAA) National Weather Service (NWS) endorsed the two-tone EBS audio signal for use in state and local emergencies. This MOU was updated in 1982 to reflect the reorganization of FEMA.[3]

5. Our authority to regulate emergency broadcasting emanates primarily from Sections 303(r) and 706(c) of the Communications Act, 47 U.S.C. §§ 303(r) and 706(c). Section 303(r) is a general grant of rulemaking authority to the Commission. Section 706 grants specific, communications-related powers to the President in time of war or national emergency. In such event, the President may, for example, take control of, or suspend or amend the rules and regulations applicable to, any or all stations within the Commission's jurisdiction. Our EBS rules are designed to enable the President to exercise these powers quickly and efficiently.

6. Our authority to regulate participation by cable systems in the emergency alerting process, on the other hand, stems primarily from Section 624(g) of the Communications Act, 47 U.S.C. § 544(g), see paras. 50-65, infra. That provision requires the Commission to ensure that cable viewers are afforded the same access to emergency communications as broadcast viewers and listeners. We also note that the Americans with Disabilities Act, 42 U.S.C. § 12101, et seq., aims to "make all facets of our society fully accessible to individuals with disabilities."[4] Our rules adopted herein comport with that goal as well.

A. The current EBS

7. The current EBS is composed of technical equipment and an operational structure which provides guidance to those broadcast stations and others who participate in EBS. It is a joint government-industry effort which responds to a Presidential requirement to address the entire nation on very short notice because of a grave national threat. It uses the facilities of the communications industry, including 13 radio and 5 television networks, 12 cable networks, the Associated Press, Reuters and United Press International wire services, and over 13,000 broadcast stations.[5]

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[3] See MOU dated June 28, 1976; revised April 21, 1982.

[4] Comments of the National Center for Law and Deafness, November 24, 1993, at 5.

[5] The Broadcast Station Protection Program (BSPP) is a program funded by the Federal Emergency Management Agency (FEMA) that enhances the operating capability of key EBS stations. The program provides these stations with emergency generators, remote pickup units, electromagnetic pulse protection, and other facility add-ons in order to enhance the stations' ability to

8. Technically, EBS is an analog transmission system in which broadcasters are required to have specified equipment and relies upon operator control. During an alert, EBS equipment transmits audio EBS messages after receipt of a two-tone attention signal, which activates the decoder/receiver at a broadcast radio or TV station. The EBS station operator must listen to the audio message coming out of the speaker (of the decoder/receiver) to determine the reason the EBS signal has been transmitted.[6] If the audio message was a test of the system, the test date and time are logged. If the message is for a national emergency, they must alert the public. If the message is for a state or local emergency, responding personnel have a number of options, including ignoring or rebroadcasting the message.

9. The Commission requires the use of EBS only in the event of a national emergency. State and local authorities, however, may request use of the EBS to provide early warning to communities about regional, state, county, and local emergencies. More than 20,000 activations of the EBS have been reported since 1975[7], and every state and territory has used it. State and Local Emergency Communications Committees (SECC and LECC)[8] are responsible for the development of plans which detail procedures for stations and officials to follow for activation of the EBS. Broadcast stations have voluntarily made increasing use of EBS since the system was allowed to be used for local emergencies.

10. The current EBS has several significant drawbacks. First, the equipment relies on the broadcaster who receives the initial alert to alert other broadcasters in a "daisy chain."[9] The daisy chain is often unreliable, as stations are completely dependent on the station they monitor to activate the EBS system. If the key "upstream" station fails to activate, stations further

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continue to operate in an emergency. There are over 600 broadcast stations in the BSPP.

[6] The two-tone Attention Signal generated by the encoder does not carry any intelligent information. It merely turns on or activates the decoder/receiver.

[7] The Commission does not require stations to report EBS activations. Our figures represent only those activations which have been voluntarily reported. We believe, based on informal conversations with licensees, that thousands of additional alerts have been issued.

[8] See Section V.B. in this Order.

[9] "Daisy chain" monitoring refers to the present day system where key stations relay EBS messages with the two-tone signal from one station to another.

down the chain are not alerted to the emergency and, therefore, cannot inform their audiences. There has been no monitoring of multiple sources for emergency alerts. In addition, operators must be trained in EBS activation procedures in order to send and receive emergency notifications.

11. Second, much EBS equipment dates back several decades. Very few manufacturers produce repair parts for EBS equipment. If a broadcaster had to purchase replacement EBS equipment, the replacement costs would be comparable to the cost for new digital equipment. Moreover, even if the current equipment could be economically maintained, cable participation in EBS would be severely handicapped because the present signalling scheme does not lend itself to unattended operation.[10]

12. Third, when an emergency strikes, the EBS can still fail even if the alert is forwarded to the next station in the chain, the equipment is working properly, and the operating personnel are knowledgeable because the current EBS relies on station personnel to acknowledge and relay the alert, which can cause critical delays. Seconds may mean the difference between life and death during sudden emergencies such as tornadoes, flash floods, hazardous chemical spills, and nuclear accidents. In addition, current EBS equipment does not allow participants to alert the public selectively in the event of an emergency. For example, an EBS alert warning of a flood may be of little value to listeners located in more distant locations. These disadvantages of the EBS have become more apparent as communications technology has advanced, and have contributed in part to our determination to examine more closely the modernization of the system. After every major disaster, the National Oceanic Atmospheric Administration (NOAA) conducts a survey to determine the effectiveness of warning systems. Approximately 80 percent of these surveys have indicated the need for improvements in the EBS because of deficiencies inherent in the old system.[11]

B. Origin of this proceeding

13. In 1989 the National Association of Broadcasters (NAB) petitioned the FCC for a rule making to shorten the two-tone audio alerting signal and to revise other operational aspects of

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[10] Cable system facilities are predominantly unattended, and headends are frequently located in remote areas. As noted above, the current EBS system depends on manual intervention by trained personnel to pass an alert to additional broadcast stations and to inform the public of an emergency.

[11] See letter from NOAA, NWS to FCC, May 20, 1994.

the EBS.[12] In 1991, the Society of Cable Television Engineers (SCTE) established an EBS working group to explore the most efficient and cost effective manner to reach their cable subscribers during an EBS alert.

14. Since 1991 there have been four Commission actions examining the modernization of EBS. On June 13, 1991, we adopted a Notice of Inquiry (NOI) to solicit comments on new technology and equipment that would improve EBS.[13] On October 9, 1991, we adopted a NOI/Notice of Proposed Rule Making (NPRM) to solicit comments on the NAB petition to shorten the two-tone signal and to propose a rule to prohibit false use of the EBS signal.[14]

15. On September 17, 1992, we adopted a NPRM/Further Notice of Proposed Rule Making (NPRM/FNPRM), FO Dockets 91-301/91-171, consolidating the earlier proceedings and seeking further comments on proposals to update the technical and operational features of the EBS.[15] On November 12, 1992, we issued a Public Notice addressing a requirement in the Cable Act of 1992 to include cable in EBS and invited commenters to discuss this requirement when filing comments to the NPRM/FNPRM.[16] We received 63 comments and 17 reply comments in response to the consolidated NPRM/FNPRM.[17]

C. Field tests

16. In December, 1992, we invited equipment manufacturers to demonstrate their alerting equipment and prototypes at the Commission.[18] Eleven manufacturers participated. This demonstration showed that newer technologies were available and effective to create more advanced emergency communications

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[12] See Petition for Rule Making (RM-7188), filed by the National Association of Broadcasters.

[13] Notice of Inquiry, FO Docket 91-171, 6 FCC Rcd 4264 (1991).

[14] Notice of Inquiry/Notice of Proposed Rule Making, FO Docket 91-301, 6 FCC Rcd 6739 (1991).

[15] NPRM/FNPRM, FO Dockets 91-301/91-171, 7 FCC Rcd 6903 (1992).

[16] Public Notice, DA 92-1497, November 12, 1992.

[17] Commenters and reply commenters to the NPRM/FNPRM are listed in Appendices A and B.

[18] See Public Notice No. 30336, October 29, 1992, "FCC To Hold Exhibit of Various Emergency Alerting Systems."

equipment.

17. We determined that further testing would reveal the best methods to integrate various technologies, the compatibility of different prototype equipment, and verify the robustness of the proposed digital protocols. We invited interested parties to participate in field testing of the proposed EBS system.[19] An Eastern and a Western field test were scheduled. Plenary meetings for the tests began in March 1993. These meetings involved manufacturers, industry members, and government officials. Each test was headed by a state EBS coordinator who worked with the group to design the tests. The testing was based on the proposals presented in the NPRM/FNPRM and drew on the expertise and experience of each participant.[20] The field tests documented the capabilities of existing or prototype equipment to deliver emergency communications.[21]

18. The Western Field Test was conducted June 27 through June 30, 1993, in Denver.[22] More than 75 representatives from broadcast stations, cable systems, satellite companies, emergency management offices, consulting engineering firms, amateur radio organizations, and manufacturers of alerting equipment and consumer end products, voluntarily provided their own personnel and resources for the tests.

19. In-band, subcarrier, satellite, HF radio, VHF, UHF, microwave, and telephone were the primary transmission modes tested. Three focus groups and one composite focus group offered some insight into audience perception of the systems and

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[19] Public Notice No. 31623, February 3, 1993. More than 150 representatives and observers from broadcasting, cable, satellite, other communications transmission means, emergency management, equipment manufacturers, and government agencies participated in these tests.

[20] The various tests were meant to be exemplary and not inclusive of every proposal in the NPRM/FNPRM. See Appendix D for list of participants in the Western and Eastern field tests.

[21] More than 35 devices were demonstrated during the tests. While the tests were not representative of all aspects of our proposed system, they did indicate that the equipment tested had the capability of delivering alerting messages in many kinds of environments.

[22] See Public Notice, DA 93-1211, October 6, 1993, and the Western Field Test results referenced therein.

equipment.[23]

20. The Eastern Field Test was conducted September 12, 1993, through September 15, 1993, in Baltimore.[24] The tests involved more than 60 representatives from government, industry, and manufacturing. Technical/emergency management personnel and others served as official observers to record the test results. Testing sites included the State Emergency Operation Center, experimentally licensed AM and FM stations,[25] FCC field facilities, the National Weather Service office, a cable head-end, existing AM and FM stations, and Spanish language television and radio stations.

21. The goals of both tests were to examine the ability of broadcast, cable, satellite, and other means to transmit digital information, to test speed, redundancy and reliability factors, to determine operator needs for equipment responsiveness, to test as many of the parameters in the NPRM/FNPRM in different situations as feasible, and to experiment with an architecture broad enough to encompass other technologies as they become available. In response to the field testing, we received 42 comments and 9 reply comments.[26]

22. The test data demonstrated that (1) monitoring of multiple sources of emergency information was successful in providing reliability and redundancy; (2) a small geographic area could be alerted without affecting other areas; (3) transmissions could be easily relayed from point-to-point via different transmission means; (4) equipment could automatically receive, store, and forward alerts and messages; (5) in-band and

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[23] See Dr. Dennis Mileti's report in the Western Field Tests, pp. 484-511. The general group consensus was that there was no objection to devices that turned receivers on and off in the event of a real emergency; that testing should not be overused; and that there was a place for devices that flashed or radiated light to draw attention to the source of information.

[24] See id., discussion on the Eastern Field Test results.

[25] These stations were specially licensed by the FCC to Mr. Morris Blum, Chair of the Maryland Emergency Communications Committee, so that tests could be conducted continuously on-the-air and not disrupt an existing station's operations or programming.

[26] See Public Notice DA 93-1211, October 6, 1993, which invited interested parties to review and comment on the results of the field tests. Commenters and reply comments are listed in Appendix C.

subcarrier transmissions could coexist;[27] (6) satellite and cable technology could interface with the EAS digital transmission scheme; (7) mobile reception of in-band and subcarrier were equally susceptible to multipath, distortion, shadowing, and other propagation anomalies; and (8) consumer radio receiver equipment could turn itself on from an "off" position in response to broadcasters' digital signals, such as Radio Broadcast Data System (RBDS) signals.

23. The field tests clearly showed that the current EBS was of limited utility compared to capabilities offered by the new generation of digital equipment. The tests also conclusively demonstrated that digital messaging for emergency alerting was feasible regardless of the transmission link or operating environment tested. The digital coding schemes used during the tests were more technically demanding than the EAS codes which we adopt by this Order.[28] We found that transmission media traditionally associated with analog modulation, like AM broadcasting, were suitable for carrying digital information. Furthermore, we realized the significant possibilities of alerting using digital communications technologies, such as those used by some subcarriers, pagers, computers and satellite systems.

24. The tests confirmed that many types of transmission systems could be links in the EAS network, because they all were capable of digital signalling and interfacing. The tests showed that there was a place in emergency alerting for each transmission system because the systems complemented each other in delivering alert messages. Thus, we found that every technology and service had advantages, and each could fill particular needs.

25. There has been significant growth and improvement in emergency communications prototype equipment since the December 1992 demonstration and the field testing. Emergency managers, deaf and hard-of-hearing persons, Spanish language participants, and blind persons have given important feedback to the manufacturers.[29] Cable equipment suppliers have worked to optimize the video display for television. During the course of the two tests, over 35 equipment prototypes were used, which

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[27] Subcarrier transmissions do not interfere with the main channel programming, and therefore information can be transmitted without interfering with regular programming.

[28] See Appendix E, § 11.31.

[29] See generally comments of Self Help for Hard of Hearing People, October 22, 1993 and of the American Council of the Blind of Maryland, November 11, 1993.

indicates that manufacturers will be able to offer a wide range of equipment to broadcast stations and cable systems. Our tests also showed that satellite equipment manufacturers could offer emergency communications for mobile uses and other configurations.

III. MODERNIZING EBS

26. During this proceeding the Commission has held regional workshops and numerous meetings with the telecommunications industry, manufacturers, state and local emergency officials and others to discuss the technical and operational aspects of modernizing EBS. More than 225 entities have filed comments since this proceeding began in 1991.

27. We examined more than 20 issues in the NPRM/FNPRM. The key issues include: (1) requiring cable to be a participant, (2) designing equipment that can interact with all technologies, (3) permitting automation, (4) reducing dependency on single station monitoring, (5) reducing on-air EBS testing, and (6) shortening the two-tone alerting signal. The decisions on these and other items are discussed below.

28. Is There A Need for An Emergency Broadcast System? A threshold question is whether the Commission should continue to require an EBS or similar alerting system. Since the early 1950's, the installation of alerting equipment has been mandatory in order to provide the President with the capability to transmit national emergency information to the general public.[30] This requirement has been reaffirmed by every Administration since President Truman. We are fortunate in not having had an emergency requiring use of that capability. The fact that we have not had to use EBS for a national alert, however, does not necessarily support a determination to abandon the concept of an emergency warning system. As discussed further below, we continue to believe that maintaining such capability is in the public interest. Indeed, based on the history of this proceeding and of the EBS generally, we believe that effective emergency warning systems can reduce life and property loss and that effectiveness and timeliness are clearly linked.[31]

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[30] Alerting equipment is most frequently used to provide federal, state and local government officials a means of communicating critical information to the public.

[31] In the NPRM/FNPRM, we pointed out that the new equipment would contribute to reducing the time it takes to disseminate an emergency message, and therefore, new equipment could reasonably be expected to yield a disproportionately large gain to the public interest.

29. One commenter has questioned the need to modernize or replace the EBS and has suggested instead that EBS may not be necessary if there is greater use and expansion of the National Weather Service (NWS) NOAA Weather Radio (NWR) network as a replacement.[32] The Federal Emergency Management Agency (FEMA) also maintains warning systems. The FEMA and NWS systems, including NWR, and EBS, complement each other to form a cohesive warning structure. Each system working alone cannot do the job. NOAA Weather Radio alone does not have the coverage capabilities to reach all of the nation's populace. FEMA's systems interface mainly with other government agencies, including state and local emergency organizations. The EAS needs to have the emergency information from the above agencies. Working together, the three agencies provide federal, state and local agencies with a means to alert the public to all orders of emergencies. Radio and television broadcast stations currently reach nearly every part of the country, often with several stations. There are radios and televisions in virtually every home and business. In order to receive NWR broadcasts, the consumer must buy a special radio. Penetration of NWR receivers into homes is not comparable to that of standard radios and televisions.[33] We therefore do not believe that the NWR is a realistic alternative.

30. Can the EBS be Improved or Must it be Replaced? The NPRM/FNPRM proposed to modernize the EBS by requiring replacement of the old equipment with equipment capable of interacting with multiple mass communications technologies. Our review of the existing EBS indicated that there are enough serious shortcomings to warrant its replacement by a new Emergency Alert System (EAS). Of those commenters addressing this issue, virtually all supported the need for changing EBS. The shortcomings of EBS most commonly identified in the comments were the age and inflexibility of current equipment and the fact that it does not work with new mass communication technologies such as cable. As commenters overwhelmingly agreed, the existing EBS mechanism is vulnerable to operator error and at times has failed to deliver timely information to the public.[34] It also appears that the

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[32] See ex parte letter of the National Association of Broadcasters to Chairman, FCC, April 29, 1994, and the Press Release of the Department of Commerce, "New Hazardous Weather Warning System," March 31, 1994.

[33] As one of the three agencies responsible for EBS, NOAA NWS has participated in this proceeding and has supplied extensive information to the Commission. See, e.g., letter from Assistant Administrator for Weather Services, NOAA, to Chief, Field Operations Bureau, September 13, 1994.

[34] See, e.g., comments of Delaware Department of Public Safety, November 17, 1992, at 1.

cost of replacing existing EBS equipment would equal that of new EAS equipment with superior capabilities and lower operating costs.

31. The majority of commenters agreed that it was no longer cost effective to invest in the current equipment. This perspective was best expressed by a joint filing of several state broadcast associations which stated: "We recognize that the new EBS improvements will cost us some money, but our consensus is that EBS is broken and needs to be modernized."[35] Another system participant commented: "While we realize that the modernization might create some additional cost, we believe such cost could be minimized by utilizing equipment with modular or highly integrated construction."[36]

32. One state broadcasters' association stated, "The system selected must work in seconds, must work every time and should require little or no broadcast operator intervention."[37] Other commenters were particularly hopeful that new equipment might alleviate common problems. "[W]e routinely incur problems with poorly trained operators after hours, or operators not at their usual positions 'to take the call'."[38] We agree with these commenters that it is impractical to rely on the current EBS equipment and operating procedures or to attempt to upgrade them using the existing analog EBS technology. We further believe that replacement of existing EBS equipment with a new generation of digital EAS equipment better complies with our statutory mandate to provide adequate communications facilities that enhance national defense.[39] Replacement of EBS will ultimately result in an alerting system that will function seamlessly with many sources of emergency communications. In view of the reasons

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[35] See ex parte letter from the New Jersey Broadcasters Association, the Connecticut Broadcasters and the South Carolina Broadcasters Association to Chairman, FCC, December 3, 1993, at 1.

[36] Comments of Cap Cities/ABC Inc., January 15, 1993, at 8.

[37] Comments of South Carolina Broadcasters Association, January 8, 1993, at 1.

[38] Comments of State of Delaware, Department of Public Safety, November 17, 1992, at 1 .

[39] See 47 U.S.C. §§ 151 and 606. EBS is also authorized by a Presidential Statement of Requirements dated October 17, 1990 and is cited in the 1992 Cable Act as supporting the national defense and saving life and property. See Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, § 16(b).

discussed above, we will replace, rather than attempt to improve, the EBS.

33. We are confident that the new equipment will be a better overall value than the current equipment because it permits automated operation, is reliable, and should be usable for a longer period of time due to its digital nature.[40] We weighed the advantages of a new system versus the costs of repairing and upgrading the EBS system, and find that requiring new equipment is clearly preferable.

34. The new system will not be limited to a particular transmission system such as analog broadcasting. No one transmission system could, in isolation, sufficiently achieve our goals for EAS. We agree with the concerns of most commenters that to select one system to the exclusion of others would create problems of incompatibility. Although some commenters and participants in the field tests preferred a particular transmission system, such as RBDS, there was no clear consensus by commenters on a preferred transmission system. We believe that by not choosing or favoring one transmission mode over others, the resulting alerting system will offer the most flexibility to system participants and also be in the best interest of the public and system participants.

35. The extraordinary diversity of technologies available to be used in an alerting system suggests a need for an architecture that can accommodate all the proposed media distribution schemes. Therefore, as the foundation for the new EAS, and as discussed more fully below, we will adopt a mandatory standard digital protocol with a flexible architecture usable by many kinds of transmission media.

36. With such a standard, in-band broadcasting of alerts could be received today over any radio or television. Subcarriers could transmit unobtrusive text data and activate turned-off receivers.[41] Cable could give all subscribers alerts and special cable equipment could provide the deaf, hard-of-hearing, blind, and non-English speaking audiences distinctive

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[40] If the present two-tone system were updated and not replaced, it would still have to rely on a daisy chain of stations monitoring for alerts, and weekly on-air audible tests would still have to be conducted. A major criticism made by the commenters was that the weekly tests caused the public to "tune out" the EBS alert, which placed them in jeopardy in case of a real emergency. As previously discussed, the daisy chain was also viewed as unreliable.

[41] Once a universal in-band protocol is in use, consumer grade radios can be produced possessing this same capability.

visual and audio alerts. Satellite terminals could be used for remote field activations and could be used on disaster sites. Pagers could be used to alert persons in offices or who are travelling. In addition, such a standardized digital protocol is flexible enough for expansion and upgrading as new kinds and generations of transmission systems become available in the future.

37. Renaming the EBS. In the NPRM/FNPRM the Commission sought comments on the merits of renaming EBS to reflect the incorporation of other technologies and the modernization of the system.

38. Although only nine commenters responded to this proposal, they provided a litany of reasons why this is the time to rename the EBS. Comments such as EBS "[S]hould be renamed to denote a multi-source information network;"[42] "[C]hanging the name would also help the public to understand there is a new, technologically advanced system replacing the current two-tone system, which has come to have a negative image;"[43] and it represents a "clean new start to a highly improved system"[44] typified support for the name change. Only one respondent was against changing the name, on the grounds that the present name had recognizability.[45]

39. We believe it is in the public interest to rename the current system. This action best reflects the inclusion of other technologies in the system and should dispel any negative images associated with the current EBS. The new system will be called the Emergency Alert System (EAS). Because cable and other transmission capabilities will ultimately become an integral part of the new alerting system, the word "broadcast" in Emergency Broadcast System should be changed to inform the public that the new system, EAS, is not necessarily a broadcast-based service but ultimately an aggregation of many services working together. The name change should also provide the opportunity to promote public awareness of the new EAS.

A. Broadcast participants

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[42] Comments of Society of Broadcast Engineers, Inc., January 15, 1993, at 5.

[43] Comments of Society of Cable Television Engineers, January 15, 1993, at 15.

[44] Comments of Nutmeg Broadcasting Company and Connecticut Broadcasters Association, January 22, 1993, at 2.

[45] See Comments of L.S. Parr, January 14, 1993, at 2.

40. Broadcast stations will continue to play a significant role in the new EAS. The following paragraphs discuss the general parameters for their participation. Specifically, all broadcast station licensees, including noncommercial educational Class D FM stations and low power TV stations, will be required to have EAS decoders. Broadcast station licensees (except noncommercial educational Class D FM stations and low power TV stations) additionally will be required to have equipment capable of encoding the EAS codes installed in the broadcast station programming chain, such as at the transmitter, studio or control locations. If manual interrupt will be relied upon, encoders will have to be located so that station staff can initiate the EAS code and Attention Signal transmission at normal duty locations. Where broadcast stations are co-owned and co-located[46] with a combined studio or control facility, only one set of EAS equipment will be required for the combined facility.

41. Television stations will be required to have the capability to transmit automatically a visual message that will include the originator, event, location, and valid time period of the message. If the message is a video crawl, it must be displayed at the top of the television screen or where it will not interfere with other video messages. We strongly encourage FM stations, especially those with key EAS designations[47] located in areas with many emergencies, to transmit the EAS codes on subcarriers, including 57 kHz using the RBDS standard. See paras. 43-49, below. We do not, however, require this technology.

42. We believe that it is essential for all segments of the population to be advised of the need to take protective action in the event of an emergency. The American Hispanic Owned Radio Association drew our attention to the fact that, "Federal and State Emergency Broadcast Systems primarily remain set up to only serve the English-speaking population . . . In the event of a disaster/emergency, non-English speaking persons would be deprived of vital information . . . there are approximately 350 Spanish language stations across the country, serving over 98% of the Spanish-speaking population."[48] To alleviate the concerns of non-English speaking program providers and to ensure that all audiences have the ability to take appropriate measures during an emergency, such stations or program providers may send the actual

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[46] e.g., an AM station and an FM station licensed to the same entity may be co-located.

[47] See Appendix E, § 11.18.

[48] See ex parte Comments of the American Hispanic Owned Radio Association, April 5, 1993, at 2.

EAS alert in their primary language.[49] Stations not carrying the test script or activation in English should so state in their Local Emergency Communications Committee plans. See paras. 131-135, infra.

43. Radio Broadcast Data System (RBDS). In the NPRM/FNPRM we discussed the FM "box" and further proposed to require Radio Broadcast Data System[50] (RBDS) encoding equipment for all key FM EBS designated stations. RBDS is a defined protocol for data that is transmitted on the 57 kHz subcarrier of FM radio broadcast stations[51]. Under this standard, data is sent at 1200 baud by utilizing BPSK modulation techniques. Information is released in specialized groups of revolving but continually updated data. Each group is delimited by a header which indicates the type of information in the group, such as paging, traffic messages (for road signs), navigation (Global Positioning System), tuning and radio format information, and data text. One group is Emergency Warning System (EWS, group 9A) which is incorporated with the other groups of data upon demand by the broadcaster.

44. The RBDS technology allows for frequency agility which permits receivers to search out and lock on to local emergency alert stations. It allows for switching from one program source to the emergency alert. Many have Liquid Crystal Displays for display of text messages. Consumer receivers equipped with RBDS can be turned on selectively and automatically from a standby state, much like personal pagers or continuous tone coded squelch system (CTCSS) radios so that anyone hearing them would receive the emergency audio message being broadcast. Increasing numbers of consumer electronic devices, such as car radios, are equipped to receive RBDS.

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[49] This action was endorsed by several SECC's. They were concerned that Spanish broadcast stations within their area were forced to send the current EBS test and alert in English and wasting valuable time since their audiences were non-English speaking.

[50] Radio Data System (RDS) is the commonly referred to name of the United Stations Radio Broadcast Data System (RBDS) standard, which was produced by the RBDS subgroup of the National Radio Systems Committee, sponsored by the Electronic Industries Association and the National Association of Broadcasters. The voluntary standard reflects the input from broadcasters, receiver manufacturers, users and potential users of RDS services.

[51] For a full explanation of RBDS, refer to the established standard developed by the National Radio Systems Committee (NRSC) sponsored by the Electronics Industry Association (EIA).

45. Several parties, including broadcasters and emergency/safety coordinators, who filed in response to the NPRM/FNPRM and the Public Notice embraced the use of RBDS technology because of its capacity to perform a plethora of services, including EAS alerts. The enhancements most often mentioned were individual customer alerting, turning on inactive receivers such as radios, cassette or compact disc players (with RBDS receivers built-in), push-button activation systems for public safety dispatchers, the ability to receive multiple sources of emergency alerts, and enhanced security systems.

46. RBDS representatives in meetings and field tests related to this Order demonstrated the significant role this technology can have in the EAS system both for participants and the public. One of the alerting systems discussed in the NPRM/FNPRM is a significant user of RBDS technology.[52]

47. Many commenters and FM stations during the field testing expressed a strong interest in the increased use of subcarrier technologies and the RBDS standard.[53] One manufacturer who participated in the field tests provided equipment that exceeded the capabilities of the EAS. This equipment had many enhanced features favored by state and local communities who are in high risk areas and who therefore have a need for equipment with greater flexibility.

48. Those opposing use of RBDS raised concerns that requiring subcarrier use might be burdensome and in some cases conflict with current subcarrier uses. Nonetheless, the ability to have a new generation of consumer products that could immediately alert the public was enthusiastically endorsed by many commenters. As one county manager pointed out, "[N]o emergency alerting system will be meaningful if it cannot automatically turn on devices in people's homes, cars and public assembly areas during the day or night."[54]

49. Given the significant potential of RBDS, we encourage FM broadcast stations to provide emergency warnings via subcarrier using RBDS. Before, simultaneously, or after transmitting EAS messages in the main audio channel, RBDS

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[52] NPRM/FNPRM at paras. 17-19. See also Comments of Sage Alerting Systems, Inc., January 15, 1993, at 8.

[53] South Carolina Broadcasters Association, Jefferson County Emergency Management, EBS Waco Operational Area, and the Connecticut State Emergency Communications Committee were among the supporters of RBDS technology.

[54] Comments of Middlesex County Emergency Management, February 10, 1993, at 2.

equipped stations may transmit EAS messages on a subcarrier. See para. 99, infra. We encourage FM stations, especially those key to EAS operations, to transmit the EAS codes in the RBDS standard. RBDS devices can be easily integrated with EAS devices because both employ common RS-232 data connections and protocols.[55]

B. Cable participants

50. The Cable Act of 1992 required standards to ensure that cable systems provide emergency information to their subscribers. It stated "[E]ach cable operator shall comply with such standards as the Commission shall prescribe to ensure that viewers of video programming on cable systems are afforded the same emergency information as is afforded by the emergency broadcasting system pursuant to Commission regulations...."[56]

51. For several years, the cable industry and the Commission have been exploring ways to increase cable television participation in the EBS. In 1991 the Society of Cable Television Engineers (SCTE) established an EBS subcommittee to review equipment designs that would allow cable operators to participate in EBS. SCTE also strived to identify mechanisms that would strengthen cable's capacity to inform cable subscribers of emergencies. In addition to its work in subcommittee, SCTE actively participated in the FCC field tests of the proposed alerting system, and several SCTE members began serving as local chairs on the EBS emergency communications committees. The National Cable Television Association (NCTA) has also been investigating how to increase cable participation without creating excessive burdens on the cable operator.

52. In the NPRM/FNPRM we proposed to make cable an equal partner in EBS. Recognizing that many cable operators use remote control and automation in their facilities, we further proposed to take into consideration these characteristics in the new system.

53. Commenters were supportive of our proposal to include

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[55] RBDS is available on several hundred FM stations in the U.S., covering more than 70 percent of the population. See Appendix E, § 11.51 (e), for rules regarding integration of RBDS into EAS.

[56] See Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, § 16(b). The Cable Act of 1992 imposed this requirement by adding subsection (g) to Section 624 of the Communications Act of 1934, 47 U.S.C. § 544(g).

cable in the new system.[57] Opinions differed, however, on whether participation should be mandatory or voluntary.[58] Some commenters were concerned that existing alerting equipment required by local municipalities should not be made obsolete, but rather should be incorporated into any new system.[59]

54. Those who believed cable participation should be mandatory frequently noted that a substantial number of households subscribe to cable systems. One commenter pointed out that in New York State, "[C]able television is available to approximately 85 percent of all dwelling units. Over 60 percent of these dwelling units, some 3.7 million households, actually subscribe to cable television."[60] Commenters who felt that participation should be voluntary cited the expense and technical difficulties associated with cable involvement.[61] Some suggested weighing the amount of involvement against the proportional cost. Also, one commenter pointed out that cable systems with existing emergency alerting systems have achieved great success even though their efforts are voluntary.[62]

55. NCTA noted that "[S]ome cable systems have already deployed emergency alerting equipment in their headends pursuant to local franchise requirements. The Commission should ensure that this embedded base of equipment is not rendered obsolete by developing an EBS device that bridges the existing equipment with the new equipment."[63]

56. National cable program suppliers such as Home Box Office, MTV, Cable News Network and The Weather Channel have been participants in the national EBS since the mid 1980's. Few local cable systems, however, have purchased the necessary equipment to

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[57] Thirteen comments and five reply comments addressed cable participation in the new EAS.

[58] See Comments of State of Ohio Adjutant General's Department, December 2, 1992, at 3 and South Carolina Division of Information Resource Management, January 13, 1993, at 5.

[59] See Comments of Cablevision Industries Corp., January 15, 1993 at 2.

[60] Comments of Telecommunications Division, New York State Commission on Cable Television, January 15, 1993, at 2.

[61] See Reply Comments of Kenneth Wright, February 16, 1993, at 2.

[62] See Comments of Time Warner, November 12, 1993, at 5.

[63] Comments of NCTA, November 12, 1993, at 2.

participate in the EBS. A possible reason for not participating is that some systems have equipment, as part of franchise agreements, that allows local authorities to override programming with emergency information.[64] Subscribers to these systems can still miss EBS emergency information, because of lack of participation by the cable system. If a cable subscriber is watching one of the many channels carried by a cable system and an emergency activation of the EBS occurs, that subscriber will, in many cases, be unaware of the EBS alert and, therefore, of the need to take protective action. The cable television viewer would receive the alert only if that cable system were a part of the EBS or if the channel that the viewer was watching were a local television station delivering an EBS message.

57. We believe that cable is an invaluable link in the dissemination of information during emergencies. More than 60 percent of all American homes are wired for cable. The Cable Television Advertising and Marketing Society estimated in 1992 that by the year 2000 cable penetration would reach 78 percent. The Cable Act of 1992 requires that cable television systems must be capable of providing EAS alerts to their subscribers.[65] That requirement, affording cable subscribers the same ability as broadcast viewers to take action to protect life and property, serves the public interest.

58. We therefore require cable systems to maintain EAS equipment in accordance with the rules we adopt in this Order (See Appendix E). For national emergencies, we are requiring compulsory retransmission of Presidential EAS messages. Cable systems must interrupt all channels and provide information to subscribers. Although not required, we also encourage EAS activation for state or local emergencies.

59. Cable systems must transmit the national EAS message codes, the attention signal, emergency message, and end of message (EOM) code to their subscribers. The attention signal can be produced from a storage device instead of a type-accepted encoder. The equipment must provide an audio message on all channels for those event codes selected by cable company personnel. Cable systems may elect not to interrupt EAS messages from broadcast stations upon written mutual agreement among all

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[64] See Reply Comments of Kenneth Wright, February 16, 1993, at 2.

[65] We currently require all television stations to provide video information in the event of any emergency communications, including, but not limited to, EBS. EBS activation requires both audio and video interruption. See 47 C.F.R. § 73.1250. The Cable Act requires that cable viewers be afforded the same access to emergency information. See para. 6, supra.

concerned.

60. During an EAS alert, cable systems must provide 1) an all channel audio message override; 2) momentary video interrupts of short duration on all channels; and 3) at least one video message override channel.[66] Cable operators must provide the EAS video message on the television screen. The message may be at any location on the screen so long as it is easily seen by the subscriber. It must not interfere with closed captioned information.

61. Hard of hearing and deaf individuals were involved in the meetings and field testing of the proposed equipment.[67] One commenter delineated the importance of including video warnings on cable systems as part of the new EAS: "[I]t is fully consistent with the Congressional mandate of the Americans with Disabilities Act to make all facets of our society fully accessible to individuals with disabilities...any oral emergency messages that are broadcast through broadcast radio, television, or other media, should be made available in text form."[68]

62. The hard-of-hearing and deaf communities rely heavily upon cable television for emergency information. Cable systems must therefore provide either audio and video EAS messages on all channels or an equivalent alerting function on the entire system for deaf or hard-of-hearing persons. The requirement for equivalent messaging can be implemented by using independent set-top alerting devices which are turned on by EAS equipment at headends. These set-top devices can provide audio alerts, voice warnings, and visual text messages.[69] Other equipment such as strobe lights, bed-shakers, and light blinkers may also be used by cable systems to provide alerts. Cable operators may determine at what level it becomes more cost-effective to provide all video channel override than to provide these devices to hard-of-hearing or deaf subscribers, subject to Commission oversight

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[66] Video interrupt refers to the displacement of the television picture with a black, blank or flashing screen for short periods. Audio override refers to the replacement of audio messages with emergency audio information, while video override refers to providing visual/text emergency messages.

[67] See Comments of Self Help for Hard of Hearing People (SHHH), October 22, 1993, at 5.

[68] Comments of the National Center for Law and Deafness, November 26, 1993, at 3-5.

[69] Such devices were demonstrated during the field testing and are currently available. See generally para. 25, supra, and comments of Safety Alert Monitor, November 12, 1993.

on the reasonableness of this decision. (See n. 168, infra).

63. Dual Tone Multi-Frequency The Society of Cable Television Engineers (SCTE) reported that many cable systems have installed Dual Tone Multi-Frequency (DTMF) signalling equipment between the cable system and local officials for use in transmitting emergency information as part of the local franchise agreement. The SCTE recommended that DTMF decoding be incorporated in the new equipment since it is already used by many cable systems.[70]

64. In the NPRM/FNPRM we envisioned a device that would have allowed cable systems to monitor for DTMF alert signals from a touch-tone telephone.[71] In view of our decision to use a standard digital protocol to perform the EAS alerting function, we do not think it is possible to use DTMF as a means of alerting cable systems of an emergency. It is critical that cable be interoperable with other EAS delivery systems. We do not want to overlook the current usefulness of DTMF, however, or clash with existing emergency system capability. DTMF codes may be used if converted to the EAS code protocol, so that the new EAS equipment may receive the decoded DTMF messages.

65. The new EAS code protocol will be a national standard and should exceed the capabilities of DTMF. Local emergency managers will find the EAS equipment much more flexible than DTMF equipment. For example, they will be able to access EAS equipment at cable headends directly. The emergency messages in the EAS protocol will also be available to local broadcast stations and NWS offices for further dissemination.

C. Voluntary participants in the new system

66. This Order mandates that broadcast and cable participate in national alerts. They may also use the equipment on a voluntary basis at the state and local level to disseminate emergency information to the public. Other communications service providers and other entities such as electric power utilities can also provide valuable service in an emergency alert system. Many, such as telephony, satellite, and microwave networks, have voluntarily participated in EBS. We encourage their continued participation in EAS and invite other communication systems and technologies to also voluntarily

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[70] See SCTE comments, January 15, 1993 at 8.

[71] See NPRM/FNPRM, para. 52.

participate.[72] We discuss in this section several technologies that were actively involved in this proceeding and explain the rules governing voluntary participation.

Satellite Communications Systems

67. Satellite vendors in meetings and field testing demonstrated the potential advantages satellites offer to the EAS scheme, particularly in situations when broadcast and cable signals are not available. During the field testing, equipment manufacturers demonstrated to the Commission that EAS codes, in their full digital form, could be transmitted by satellite. The new EAS could, therefore, be fully interconnected to any inherently digital communications channel. There are many services that employ digital satellite technology and, therefore, can transmit the digital EAS codes.

68. During the field tests, Information Systems Laboratories (ISL) used mobile Ku-band uplink and downlink satellite terminals to demonstrate how isolated or distant receive points could be alerted. A single mobile uplink unit was used at a central location, simulating a command site. Downlink units consisting of a dish, receiver, and computer were placed at the stations and cable headends. Codes were sent from uplink to downlink via satellite. Because the satellite transmitters and receivers use standard data interfaces, the satellite was a transparent and seamless transmission medium between encoders and decoders. This type of system can be useful to local emergency operations centers or disaster command units.[73] Therefore, we encourage the voluntary participation of satellite in EAS.[74]

69. In July of 1982, the Commission authorized the Direct Broadcast Satellite (DBS) service to provide satellite delivery of programming directly to homes using small, relatively inexpensive receive stations.[75] Several parties have been granted orbital positions and channels, and some have become

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[72] Entities who wish to voluntarily participate in the EAS must follow the same procedures as EAS participants and are required to comply with the FCC's EAS rules. They should contact their State Emergency Communications Committee (SECC) or the Commission for instructions on using the system.

[73] See Public Notice, DA 93-1211 October 6, 1993, and the field test results referenced therein. ISL tests in Colorado and Maryland demonstrated different interfaces to show the versatility of satellite transmission schemes.

[74] See Appendix E, § 11.11 (c).

[75] 47 C.F.R. Part 100, Subpart A.

operational. DBS entities filed comments in this proceeding, participated in the field tests and expressed an interest in carrying EBS activations.[76] The digital EAS codes will be compatible with digital DBS technology. The Commission is interested in bringing emergency alerts to consumers receiving video and audio programming through DBS. Therefore, we encourage the voluntary participation of DBS in EAS.[77]

NOAA National Weather Service

70. NOAA Weather Radio (NWR) offers an important low-cost alerting capability. Weather related emergencies represent over 80 percent of the total number of EBS activations. These warnings are initiated by the National Weather Service and are dispatched over local NWR transmitters.[78] The NWR services are being upgraded to preface all forecasts and warnings from all transmitter sites with intelligent digital codes. These codes are created by a device called the Weather Radio Specific Area Message Encoder (WRSAME) that is part of the NWR programming equipment at the local NWR office.

71. In the new EAS system, any EAS decoder can directly monitor for and decode WRSAME codes. EAS participants can be immediately and reliably informed of weather related emergencies with the addition of any ordinary weather radio receiver and off-the-shelf connections to the EAS decoder. Monitoring NWR directly is extremely beneficial to alerting the public when time saved means lives saved, and we encourage such activity.[79]

Personal pagers

72. A recent development in personal pagers is the ability to provide warnings that imminent danger is present. Regardless of where they are within the service area, pagers have the capacity to isolate all subscribers in the affected area and allow them to receive an EAS alert. Subcarrier paging in the field tests proved to be a useful service to persons travelling or sitting in meetings.

Other technologies

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[76] Comments of United States Satellite Broadcasting Company, Inc., January 15, 1993, at 1.

[77] See Appendix E, § 11.11 (c)

[78] As of the release date of this document, WRSAME is operational on 16 NWR transmitters.

[79] For further information on NWR, see supra at para. 29.

73. Since the beginning of this rule making, various industries have contacted us regarding the role they have in alerting the public to injuries from man-made incidents. We believe that such industries have a viable role in participating in the new EAS. Therefore, this Order encourages other entities such as utility companies and nuclear industries, to provide emergency communications voluntarily pursuant to the laws in their states and areas. The guidelines in the EAS rules explain how such industries may contact their local emergency communications committee and thereby serve as a participating link in delivering EAS alerts to specific target audiences.[80]

74. This Order also permits the voluntary participation of Digital Audio Radio (DAR), High Definition Television (HDTV), and digital/interactive systems, which can use this protocol as they come on line. Telephone and cellular carriers may also voluntarily participate by providing communications links for EAS messages between emergency managers and broadcast stations and cable systems, particularly in areas where EAS monitoring is difficult. EAS alert capability can be incorporated in pagers and cellular telephones. The EAS protocol is adaptable to a wide range of technologies and will accommodate voluntary participation by those entities.

Consumer products

75. During meetings and field tests related to this Order, representatives from the consumer electronics industry demonstrated equipment that could receive emergency alerts. The products included TV sets and radios, car radios, pagers, smoke detectors, CD players, cassette players, strobe lights, and other devices capable of immediately notifying the public of emergencies. An important quality that these consumer products shared was the ability to be turned on and off automatically.[81]

76. The public will clearly benefit from devices that can turn on for alert purposes when danger threatens.[82] A wide range

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[80] See n. 72, supra.

[81] Commenters and participants in the field tests overwhelmingly supported the use of consumer products that could alert them even if they did not have a receiver turned on. The most important caveat was that it not be used too frequently or it would be ineffective, and the feature would be deactivated by the consumer.

[82] The Electronic Industries Association's Consumer Electronics Group has supplied consumer products that might carry EAS information for test participants and the Commission to

of enhanced emergency alerting equipment is in use now, and industry is working on future prototypes. We encourage the development of these consumer products which enhance the access of Americans to instantaneous public safety messages. We will work to provide industry incentives by reducing unnecessary regulatory burdens.

IV. TECHNICAL STRUCTURE OF THE NEW SYSTEM

77. The EAS consists of operational and technical elements. The operational elements are discussed in Part V of this Order. The technical elements consist of the mandatory protocol, equipment requirements, and transmission pathways. We will discuss each of these in the following paragraphs.

A. Mandatory protocol

78. Although we did not directly address the question of a protocol standard, we did propose universal parameters that would be required for all devices so that all AM, FM and TV broadcast stations and cable systems would have compatible equipment.[83] We also discussed the possible use of the NOAA WRSAME or the Radio Data System codes to trigger automatic alerts at broadcast stations and cable systems. We sought comments on the importance of parallel coding for a portion of the coding sequence to increase speed and reduce errors in activating EAS. We further sought comments on the desirability of an End of Message (EOM) code that would be able to return EAS participants to their regular programming automatically.[84] Commenters on this issue responded unanimously to the need for the Commission to chose a single, very specific, and highly defined interstation signalling code and protocol. One party stated, "[T]he Commission needs to select one, and only one, mandatory signalling method for a revamped Emergency Broadcast System. To allow multiple information delivery methods means that radio and TV stations with service areas straddling state boundaries might have to install two, and possibly three, EBS monitoring systems, to ensure that the more reliable web architecture envisioned for an improved Emergency Broadcast System is not lost."[85] Further, the field tests held in Denver and Baltimore clearly showed the value

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examine. See Appendix D for a complete list of all consumer product companies that provided equipment and worked on prototype models during the course of this rule making. Their participation was generated by the December, 1992, Public Notice.

[83] See NPRM/FNPRM at para. 54.

[84] See NPRM/FNPRM at para. 71.

[85] Comments of Dane Ericksen, November 12, 1993, at 4.

of EOM.[86] All field test participants pointed to the critical need to have an EOM code in order to return stations to their normal programming.[87]

79. We agree with the commenters and have adopted mandatory EAS codes and protocol that must be used to construct an EAS message.[88] The EAS message consists of a digital header, an attention signal, an audio or text message and an End Of Message (EOM) code.[89] The digital codes use audio frequency shift keying tones similar to the National Weather Radio WRSAME system.[90] The digital codes and protocol will be used to activate the EAS for national messages and state or local emergencies.[91] Because the codes are predefined, anyone receiving them can quickly determine their meaning. The codes define who originated the emergency message, the nature of the emergency, the location of the emergency, and the valid time period of the emergency. Also, the codes are within the audio bandpass of radio and television receivers and, therefore, are immediately available to the public. The codes have a unique transmission rate, which provides a measure of security because off-the-shelf equipment cannot be used to replicate the codes. This aids in identifying equipment that may have been used to transmit the codes illegally. Also, the code structure is very short and contains just three or four key elements. This enables EAS message originators to quickly develop warning messages for injection

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[86] See Public Notice DA 93-1211, October 6, 1993, Eastern and Western tests.

[87] See Comments of Information Age Systems, Inc., January 15, 1993, at 4.

[88] The EAS code protocol uses a non-standard data rate and shift frequencies. The reason for use of non-standard digital signalling is to allow it to be claimed as an exclusive government emergency warning standard and thus control its use. Non-standard signalling should not increase the complexity of the equipment or components, but does mean that hardware must be designed specifically for this purpose. Thus, off-the-shelf devices cannot be used directly, making it more difficult for intruders to break into the system.

[89] See Appendix E, § 11.31, for a complete description of the EAS codes and protocol.

[90] See Appendix E, § 11.31. See also para. 70, supra.

[91] See Appendix E, § 11.31, for a full description of the EAS protocol.

into the communications system.[92]

80. The location parameters can be for events affecting a whole state, a whole county, or a portion (down to 1/9th) of a county. If a city or area has its own Federal Information Processing System (FIPS) number, it can also be distinguished. An individual EAS message can contain 31 location codes. There can be unique codes for alerting specific locales such as schools, hospitals, neighborhoods, a single block within a neighborhood, or individual homes. All EAS messages will be Universal Coordinated Time (UTC) based time so that EAS messages originating in areas near the border of two different time zones and during time changes for Standard and Daylight time will be compared using the same base time standard. Additional emergency specific codes can be developed to interface with the EAS equipment. All codes will be cataloged by the FCC. The FCC and NWS will keep records of all of the codes in use. This will prevent the same Event code from being used for different emergencies and aid manufacturers and the public in programming their equipment.

81. The EAS header codes, attention signal, emergency program (audio or text) and EOM code must be transmitted in sequence in the main audio channel of all radio and television broadcast stations for EAS national emergency and required test messages. Cable systems must transmit the EAS message in the same order and must provide a momentary video interrupt and an aural message on all channels and at least one visual message override channel.[93] For state and local emergencies, EAS participants are permitted to transmit the EAS message codes and the EOM code without the audio message in the main audio channel. The attention signal, which is what the public will hear, must precede any emergency audio message. Although the two-tone EBS attention signal will continue to activate the EBS system, after July 1, 1997, that signal will only be used to alert the public and not to activate the new EAS.

B. Prohibition of false and deceptive codes

82. In the NPRM/FNPRM the Commission proposed to add a new section to the Rules and Regulations which would prohibit false

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[92] During the field tests, codes that contained the same structure as the new EAS signal were transmitted on the main carriers and subcarriers of broadcast stations; microwave links; telephone circuits; HF, VHF and UHF radio; and satellite systems. Propagation paths included nighttime AM skywave; multipath, co-channel interference, weak field strength conditions; and satellite transmission paths.

[93] See Appendix E, § 11.51(g). See also para. 60, supra.

use of the EBS two-tone attention signal or any of the new special codes.

83. While this proposal did not generate significant discussion, all the commenters believed that there should be a prohibition against false use of the EAS. The Ohio Adjutant General's Department stated "strict rules should exist to prevent the misuse of the EBS signal."[94] Several commenters also stressed that any use of the EBS attention signal, other than for tests and activations, could be an enormous detriment to the system.

84. There are two prohibitions potentially relevant to misconduct in operation of the EAS: Section 325(a) of the Communications Act, which prohibits false distress signals, and Section 73.1217 of the Commission's Rules and Regulations prohibiting broadcast hoaxes. We believe a specific prohibition against the misuse of the EAS attention signal and codes is necessary, however, because it is more specific and directly addresses the proper use of EAS codes and tones. Therefore, we adopt new Section 11.45 to prohibit anyone from transmitting the EAS two-tone attention signal or any of the new special codes for false or deceptive use. Such false use and misconduct will be considered a false distress communication and will be subject to Commission penalties, such as monetary forfeiture or other appropriate sanctions.[95]

C. Equipment requirements

85. In the NPRM/FNPRM, we proposed to replace the equipment used in the EBS with three similar new devices: one would function with AM radio/TV, one with FM radio, and one with cable television. Each device would have specified input and output parameters to allow a broadcast station or cable system to disseminate emergency information.[96]

86. Commenters overwhelmingly supported replacing the EBS and recommended that there be a single device incorporating all

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[94] Comments of State of Ohio Adjutant General's Department, December 2, 1992, at 2.

[95] See Sections 501 and 503 of the Communications Act. Broadcasters and cable systems may be liable for forfeitures as high as $250,000 for any single act or failure to act which constitutes a willful or repeated failure to comply with the Commission's Rules.

[96] See NPRM/FNPRM at para. 3.

the requirements for AM, FM, TV, and cable systems.[97] The requirements are, basically, a means to send an emergency alert and a means to receive it. We agree with the commenters that equipment designed to meet the technical requirements of the EAS should share certain universal characteristics. We also agree with commenters that these requirements can be met with a single device. We note, however, that certain broadcast stations will not be required to initiate EAS alerts and, thus, will not need a device which has both an EAS encoder and EAS decoder.[98]

87. We have adopted rules, therefore, to require EAS equipment to be capable of performing certain functions of the EAS rather than adopting rules requiring specific equipment. Simply put, all EAS equipment must be capable of using the EAS protocol either to send or to receive EAS alerts.

88. EAS equipment must be able to perform the functions described in Sections 11.31, 11.32, 11.33, 11.51 and 11.52 of Part 11. EAS equipment may be manufactured either as an integrated unit containing both the EAS encoder and decoder or as separate units. In either case, the equipment must be certified in accordance with Part 2 of the Commission's Rules, 47 C.F.R. Part 2.[99] Specific functional capabilities for EAS encoders and decoders are discussed below.

89. We believe that this will promote the innovative design of the EAS equipment by permitting manufacturers to decide how to configure equipment. This should also permit market forces to decide whether the functions of an EAS encoder or decoder will be put in one unit or separate units. A broadcast station, cable television system, or other EAS participant should be able to choose among equipment that meets its requirements.

90. EAS Encoder. An EAS encoder is used by EAS participants to originate EAS alerts by creating the EAS codes for transmission to other participants and the public. All EAS encoders[100] must have, among other requirements, the following

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[97] See comments of Sage Alerting Systems, Inc., January 15, 1994 at 26 and comments of TFT, Inc., January 15, 1993, at 1.

[98] See Appendix E, §§ 11.51 and 11.52.

[99] See Appendix E § 11.34.

[100] Station and cable personnel use the encoder to originate their own EAS header codes and transmit the audio warning message. They can program the encoder to retransmit automatically the EAS codes and voice message whenever preselected emergency messages are received. Because the EAS codes are not an effective audio alert, stations need to send

capabilities: (1) automatic override for national (Presidential) EAS messages; (2) a means to select either automatic or manual operation to transmit EAS message codes; (3) at least one audio input and one audio output; (4) at least one data input and one data output; and (5) the ability to address specific geographic areas.[101]

91. EAS Decoder. An EAS decoder is used by participants to receive EAS alerts and to translate the EAS codes into an audio or video message. All EAS decoders must have, among other requirements, the following capabilities: (1) automatic override for national (Presidential) messages; (2) a means to decode EAS messages either automatically or manually; (3) audio inputs for two EAS monitoring assignments and one data input to receive another transmission mode, (4) a means to store at least two minutes of audio or text messages and at least 10 preselected message codes; (5) the ability to display any valid EAS message codes received to show the originator, event, location, valid time period of the message and the local time the message was transmitted; and (6) the capability selectively to receive originator, event, and location codes.[102]

92. Additionally, all EAS encoders and decoders must contain security measures to ensure that there will be no unauthorized personnel changing preselected codes.[103] They must be installed so that if manual interrupt is selected, station or cable staff at normal duty locations will be alerted instantly upon the receipt of an emergency alert and can transmit EAS messages. Where broadcast stations or cable systems are co-owned and co-located (such as AM and FM stations licensed to the same entity at the same location or a cable headend serving more than one system) with a combined studio or control facility, only one set of EAS equipment is required for the combined facility.[104]

93. EAS decoders must be programmable so that licensees or

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some form of audio alert, such as the two-tone alarm signal, to alert distracted viewers and listeners, and most especially for sight impaired persons.

[101] See Appendix E, §§ 11.32 and 11.51 for a complete description of the EAS encoder requirements.

[102] See Appendix E, §§ 11.33 and 11.52 for a complete description of the EAS decoder requirements.

[103] Unauthorized use of these or any other EAS codes is a serious offense and will be dealt with severely. See paras. 82-84, supra.

[104] See Appendix E, §§ 11.51 and 11.52.

operators can select certain message codes in advance. These preselected message codes will be automatically matched to incoming message codes. Message codes will be matched by selecting the originator (who), event (what) and location (where). Station or cable management will determine which message codes in their decoder will automatically interrupt their programming for emergencies affecting their audience. This includes setting priorities for state and local area emergencies. All decoders must be programmed for EAS national level emergencies and required tests.

94. The new digital EAS codes will allow system participants to relay EAS alerts to narrowly targeted audiences.[105] The new EAS decoder must have a display that will show who originated the message, the event or reason for the message, the location of the event, and the valid time period of the event in local time.

D. Two-tone alert signal

95. In the NPRM/FNPRM we proposed not to shorten the EBS two-tone signal[106] until the future of EBS became clearer in order to avoid stations having to buy potentially obsolescent equipment.[107] Commenters agreed that the present two-tone signal was ineffective. They favored shortening it in the new system so listeners would no longer tune out the alert in the event of a real emergency.[108] In later ex parte filings, and as a result of the field testing in Baltimore, however, representatives of the blind community voiced strong opposition to a shortened tone. They argued that a shortened attention tone would not adequately draw a person's attention.[109]

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[105] For state or local area emergencies, it is permissible for stations and cable systems to transmit only the EAS codes and end of message code. This will allow stations and cable systems to relay EAS emergency information with minimal disruption of programming for unaffected audiences.

[106] The shortening of the two-tone alert signal would permit EAS participants to reduce the signal to a minimum of eight seconds, and retain a 25 second maximum.

[107] See NPRM/FNPRM at para. 9.

[108] All 17 commenters who responded to NPRM/FNPRM on the issue of the two-tone signal supported shortening it.

[109] See ex parte comments of the American Council of the Blind of Maryland, December 15, 1993, at 2; Comments of the Maryland Advisory Council for Individuals with Disabilities, December 20, 1993, at 1.

96. The majority of commenters in this proceeding advocate shortening the two-tone attention signal because it is no longer perceived as an alerting mechanism, but as a precursor to an EBS test. We believe that the arguments advanced by commenters who advocate shortening the length of the two-tone signal are persuasive. We recognize the concerns of the blind community, however, who wish to retain the current length of the two-tone signal for emergency alerts. To ensure protection for the blind, the new tone was tested in several locations.[110] The piercing burst of short tones attracted the attention of both the blind and those involved in noisy activities such as listening to music. Therefore, we will allow EAS participants to shorten the two-tone attention signal to a minimum of 8 seconds beginning in 1995 or to use a signal of up to 25 seconds. Use of the existing two-tone attention signal to initiate emergency alerts will be phased out during the transition period permitted by this Order.[111] We permit the use of the shortened tone for the monthly on-air test so as not to desensitize audiences. We strongly encourage EAS participants to transmit a two-tone signal of 20 to 25 seconds in an actual emergency alert in order to attract the attention of all listeners, including members of the blind community.

E. Monitoring requirements

97. We proposed in the NPRM/FNPRM to incorporate multiple inputs into the new equipment to reduce dependency on any one station for alerting information and to reduce the problems inherent in daisy chain monitoring.[112] We further proposed that the equipment be capable of receiving emergency programming from two different sources and that other input ports be used for receiving and decoding signals from other transmission media, such as subcarrier signalling via the RBDS or the NWR WRSAME.

98. Commenters overwhelmingly supported multiple monitoring.[113] Group W supported the need to replace the daisy chain: "[R]eplace the unreliable daisy chain approach with the more effective multiple input approach to provide greater

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[110] See ex parte filing of the American Council of the Blind of Maryland, April 25, 1994, at 1-2.

[111] Under the EAS, digital EAS codes are used to send and receive emergency alerts and the two-tone signal is used solely as an aural signal that emergency information is about to be sent.

[112] See NPRM/FNPRM at para. 58.

[113] See Comments of National Association of Broadcasters, January 15, 1993, at 2.

assurance that the public will be timely and accurately alerted during local, state and national alerts."[114] We agree with commenters' contention that multiple monitoring should eliminate problems of the existing EBS daisy chain by providing additional sources of emergency messages. We have adopted rules to require at least two audio inputs on the EAS decoder and at least one data input for optional EAS message code transmissions.[115] To ensure effective off-the-air monitoring, broadcast station licensees must continue use of two-tone signalling during the transition period.[116]

99. The monitoring assignments (key EAS sources) for participants are delineated in state and local area EAS plans. These plans are developed voluntarily by State Emergency Communications Committees. The FCC reviews these plans for conformance with the EAS rules. In situations where EAS participants cannot reliably receive any of the key EAS sources in their EAS local area, alternate assignments can be obtained. Presently, broadcast stations are required to monitor only one source. After July 1, 1996, they will be required to monitor two sources. The Commission will entertain requests for waivers to change monitoring assignments for the two required sources (audio inputs). In situations where EAS participants cannot receive any of the recommended monitoring sources, alternate arrangements or a waiver can be obtained by written request to the FCC EAS office. In the event of an emergency, waivers will be granted by telephone with a followup letter to confirm temporary or permanent reassignments. Also, the FCC uses the data in the above plans to compile and maintain EAS state mapbooks and data bases. These mapbooks and data bases are sources of information for EAS participants, government agencies and the public. The FCC will provide this information through an electronic bulletin board.

F. Automation

100. The EBS system relies on having a person available at

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[114] Reply Comments of Westinghouse Broadcasting Company, Inc. Washington, D.C. February 16, 1993, at 3.

[115] Optional transmissions could, for example, be received from (1) RBDS via FM 57 kHz subcarrier; (2) WRSAME via NWR; (3) satellite; (4) HF radio; (5) the public switched telephone network; (6) the Weather Channel; or (7) other public service providers. See Appendix E, §§ 11.33 and 11.52 of Part 11.

[116] After July 1, 1996, all broadcast stations, and after July 1, 1997, all cable systems must install and operate equipment capable of receiving and decoding the EAS message codes, emergency programming and EOM code.

a broadcast station to activate the EBS when an EBS alert is received. Broadcast stations often are faced with the dilemma of what to do when the person responsible for activating EBS is away from the receiver/decoder or is inadequately trained in activation of the EBS equipment. The need to have a full-time person on duty to determine the content and nature of EBS messages is costly, time consuming, and is often ineffective when a sudden emergency occurs. This is particularly true in cable systems where automation is frequently used and no personnel are available. Additionally, under the EBS system, key stations alert other stations in their area. If there is a local emergency in only a portion of that area, audiences in areas unaffected by the emergency are needlessly alerted. This creates confusion and heightens nonresponsiveness in the event of an activation of the EBS because of an emergency.

101. The NPRM/FNPRM proposed to permit stations and cable systems to select the desired level of automation by designating the types of emergencies they wanted to transmit.[117] We further proposed that certain categories of stations that were key to the EBS in sending alert messages to other stations could not elect full automation but sought comments on this proposal.[118] At the time, it was not known if they could reliably retransmit automatically digital codes through their audio processing equipment.

102. The majority of parties strongly supported the use of automation in the new system. Broadcasters stated that automation would ease the burden to always have a person on duty and reduce the chances of the station missing an alert that was critical to its audience.[119] Parties also regarded the use of remote control as a welcome enhancement that would increase the

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[117] See NPRM/FNPRM at paras. 17-26. We referred to three levels or "types" of automation that would free participants from having to monitor for EBS alerts: Type I automation, which would automatically override all programming of the station and alert the public immediately; (2) Type II automation, which would allow a short period of time for personnel to acknowledge and deactivate the system, and if the personnel responsible did nothing within several seconds, the system would automatically take over; and (3) Type III automation, which would always require human intervention before it interrupted programming.

[118] See NPRM/FNPRM at para. 24.

[119] See Comments of National Public Radio, January 15, 1993, at 6; comments of the Society of Broadcast Engineers, January 15, 1993, at 7.

speed of delivering emergency communications to the public.[120] A significant point raised by commenters was that any ability to activate alerts from remote locations should have safeguards to avoid sabotage or misuse of the system.[121] Broadcasters and cable operators also wanted to be able to determine the circumstances under which they could use the automation features, including not using automation at all. The comments are best summarized by one commenter who stated: "[A]utomation of the new warning system should remove critical emergency decision making process from entertainment personnel or unqualified operators without abridging the broadcaster or cable operator's discretionary rights."[122]

103. We agree with the commenters' suggestions regarding the need to allow flexibility when using automatic operation and the need for protection against unauthorized operation. We believe our other proposals are not necessary as long as all types of automation are still permitted. We have, therefore, adopted rules requiring EAS encoders and decoders to provide both automatic and manual operation and will permit each EAS participant to determine whether to use automatic or manual operation to send or receive EAS alerts.[123] Additionally, in a companion item adopted concurrently with this Order, the Commission is proposing rules to permit the unattended operation of broadcast stations.[124] Unattended operation of a broadcast station requires automatic operation of EAS equipment. We are requiring manufacturers to provide protection such as a lock or other means to prevent unauthorized access to EAS encoders and decoders.[125]

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[120] See, e.g., Comments of KWFM, March 11, 1993, at 1.

[121] See, e.g., comments of the National Association of Broadcasters, January 15, 1993, at 13.

[122] Comments of David Fricker, Chair, Waco Operational Area, Waco, Texas, January 14, 1993, at 2.

[123] Our proposal described three types of automation, Type I, Type II and Type III. See NPRM/FNPRM at para. 22. Because that terminology caused confusion and the comments, we are adopting a simpler terminology. Hereafter, any reference to automation means automatic interrupt(ion) for self-operating functions, and manual interrupt(ion) means functions necessitating human intervention.

[124] See Notice of Proposed Rulemaking in MM Docket 94-130, FCC 94-289, adopted November 10, 1994.

[125] See Appendix E, §§ 11.32(a)(1) and 11.33(a)(8).

104. Automatic operation may be used at the discretion of the broadcaster or cable operator. When in use, it must provide full interruption of programming and transmission of EAS messages.[126] Automatic interrupt must also cause the transmission of required tests and any preselected state and local area emergencies.[127] Automatic operation may be used when less experienced personnel are on duty, to preselect specific emergency alerts such as tornados or hurricanes. Automatic operation is required when facilities are unattended. We believe that allowing flexibility will allow EAS participants to tailor the use of automatic interrupt to specific situations.

105. Manual operation, the transmission of EAS alerts to the public by personnel on duty, requires the operator on duty to be alerted to the message, to read the message displayed on the decoder, and to decide whether to retransmit the message.[128] Although this procedure appears to be the same as the current EBS, there are important differences. EAS equipment will provide a visual display of the alert. The operator will be able to determine the details quickly because the display must provide information about the nature of the emergency and the originator, among other things.[129] This will allow the operator to distinguish between tests and actual activations without waiting until the voice message begins, as is presently the case with the EBS.

106. EAS equipment can also be used when broadcast stations or cable systems are operated by remote control. If manual operation is used, an EAS decoder must be located at the remote control location and directly monitor the signals of the two assigned EAS sources. If direct monitoring of the assigned EAS sources is not possible at the remote location, automatic operation is required. If automatic operation is used, the remote control location may override the transmission of an EAS alert.[130] We strongly recommend that responsible personnel maintain strict internal procedures describing the hours of automation and the preselected codes for automation or when

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[126] See Appendix E, §§ 11.51(k) and 11.52(e).

[127] EAS participants will program preselected Originator, Event and Location codes into the EAS decoder. When the decoder receives a transmission with the preselected codes it must provide the means to automatically interrupt programming. See Appendix E, § 11.51(k).

[128] See Appendix E, §§ 11.51(k) and 11.52(e).

[129] See Appendix E, § 11.33(a)(4).

[130] See Appendix E, § 11.51(m).

remote control is utilized.

G. Test requirements

107. We proposed in the NPRM/FNPRM to continue to require on-air weekly testing, but to permit EAS participants the opportunity to perform three of the weekly tests with no interruption of their regular programming.[131] We referred to this option as silent testing (we now refer to it as "unobtrusive testing" to reflect more clearly its true characteristics).[132] We further proposed to require a monthly "audible" on-air test that would be transmitted simultaneously by all stations/cable systems/other participants in a state or local area. We suggested that the tests occur between 8:30 A.M. and sunset, local time.

108. Parties that filed comments generally shared the view that "The weekly testing of the current EBS has relegated it to nothing more than a nuisance which radio broadcasters do reluctantly and the public disregards. By doing it unobtrusively, the integrity of EBS will be enhanced and its utilization increased."[133] Commenters also noted that on-air tests should not be limited just to daytime hours, noting that emergencies can happen at any time, not just between 9:00 A.M. and 5:00 P.M.[134] A few commenters supported the continuation of the weekly on-air audible testing as a means to familiarize their staffs on how to use EBS in the event of an emergency.[135] Another point raised by those who filed said that it may be extremely difficult to coordinate a monthly on-air test.[136]

109. Because the EAS equipment uses digital codes to transmit emergency alerts, the requirement that participants use audio messages when conducting weekly on-air tests is no longer necessary. We remain convinced, however, that it is important to

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[131] See NPRM/FNPRM at para. 54.

[132] The "silent" test is actually a sound (without voice or language), similar to static, unintelligible to the listener.

[133] Comments of Rhode and Schwarz, October 25, 1993, at 1 and comments of David Fricker, January 1, 1993, at 3.

[134] See Comments of Bill Croghan, Chair, Tucson, Arizona Operational Area, January 11, 1993, at 4.

[135] See Comments of the State of Ohio Adjutant General's Department, December 2, 1992 at 3.

[136] See Comments of William C. Glasser, Director of Engineering, WMBC, January 15, 1993, at 7.

fully check the emergency alerting capability of the EAS by conducting monthly on-air tests of the new equipment just as it would be used for an actual EAS emergency.

110. Therefore, we are adopting rules that will change the procedures for EAS tests.[137] All EAS participants will have the option to continue performing weekly tests with on-air messages or to perform three of the four weekly tests in an unobtrusive testing mode.[138] Unobtrusive testing should assure that the EAS equipment is functioning properly.[139]

111. Required monthly tests will involve, in addition to transmission of the digital codes, the transmission of at least 8 seconds of the attention signal, test audio script and EOM code. All AM, FM, and TV stations and cable systems within the prescribed test area, as defined by the State Emergency Communications Committee (SECC), must transmit the test within the same 15 minute period[140]. This will fully test the system just as if it were being used for an EAS alert. Unattended broadcast stations and cable systems must have a record available that shows EAS test and alert transmissions. Tests in odd numbered months should occur between 8:30 a.m. and local sunset. Tests in even numbered months should occur at times other than between 8:30 a.m. and local sunset. They will originate from key EAS sources identified in the State plan. By varying the testing schedule, we ensure that all participants will become familiar with the new system and be able to successfully activate the system on a local or state basis.

112. The test schedule and test script content to be used for the monthly on-air test or any weekly on-air tests will be developed by the SECCs and the Local Emergency Communications Committees (LECCs) in cooperation with affected stations and cable systems, the National Weather Service, and emergency

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[137] See Appendix E, § 11.61.

[138] Once the EAS equipment is operational on or before July 1, 1996 for broadcasters and July 1, 1997 for cable systems, the weekly test will consist of on-air transmission of only the EAS codes and EOM code. This should take about six seconds and be unintelligible to the listener. Because of the automatic capabilities of the new equipment, unobtrusive weekly tests can be transmitted at any time including early mornings or weekends.

[139] Participants can self-test by feeding encoder outputs into decoder inputs and thereby determine readiness.

[140] See paras. 131-135, infra, "State and Local Area Procedures," for a description of the role of State and Local Area Emergency Communications Committees (SECCs and LECCs).

management officials. Test scripts for the monthly tests should describe EAS local involvement of participants and may include live messages from local officials. The SECC will approve the test script for monthly coordinated on-air tests. We will permit all non-English speaking stations and program providers to translate the monthly test script into the primary language of the station or cable channel, which will ensure that their audiences can quickly understand when a test is being conducted.

113. If a participant activates the EAS for an actual emergency at the local or state level, that participant is not required to conduct the weekly or monthly test that would otherwise have been required for that week. Activation of the EAS at the state or local level by a broadcast station or cable system must include transmission of an audio and video message to substitute for a monthly test. Stations or cable systems that were not operating during the hours that a weekly or monthly test was transmitted should determine when the test was performed and make appropriate entries in their records or logs.

114. If in the future the Chief, Compliance and Information Bureau, determines that monthly on-air testing is no longer necessary, the Chief, Compliance and Information Bureau[141] by delegated authority may waive or change this requirement. There will be no change (except name changes) to other tests of the EAS at this time. These include the periodic wire service tests, the weekly Emergency Action Notification (EAN) network tests, Closed Circuit Tests, and periodic National Primary source tests.[142]

H. Cost of an enhanced emergency system

115. In the NPRM/FNPRM we sought comments on the cost of the new equipment and any alternatives for modernizing the current equipment.[143] While few of the commenters, with the exception of manufacturers, were willing to speculate on the cost of the new equipment, twenty of the 63 commenters who filed in the proceeding stated that cost was an important concern.[144] Commenters were apprehensive that purchasing new equipment would be burdensome to small broadcast stations and small cable

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[141] Formerly the Field Operations Bureau.

[142] See Appendix F for a definition of tests not requiring the full participation of EAS entities.

[143] See NPRM/FNPRM at paras. 46-49.

[144] See, e.g., Comments of Cablevision Industries Corp., January 15, 1993, at 3, Comments of National Public Radio, January 15, 1993, at 2, Comments of Cap Cities/ABC, Inc. January 15, 1993, at 8.

systems. Some suggested that if purchasing and maintaining equipment were to be mandatory, there should be subsidies to offset some of the costs; if no subsidies existed, participation should be voluntary.[145] Additionally, cable commenters suggested that because of the projected costs, it would be financially ruinous for small cable operators with fewer than 1,000 subscribers to participate in EBS.[146]

116. We recognize that there are initial costs associated with the new equipment, but believe the costs are justified.[147] If improved early warning contributed to only a small reduction in injuries, lives lost, and property damaged, the benefits of the new EAS would still far exceed its costs. For example, a new EAS might have saved 10 percent of the 308 weather-related deaths in 1992, 10 percent of the 3,239 weather-related injuries and 1 percent of the $38.4 billion in property and damage.[148] If so, it would have meant that 31 lives could have been saved 324 injuries and $384 million in property damage could have been avoided.

Broadcasting

117. We are requiring broadcasters to purchase the new EAS equipment[149]. In addition, broadcasters will be able to use most of the peripheral connections that they now use with their existing EBS equipment. Estimates on the cost for new equipment vary depending on the sophistication of the unit. One manufacturer who participated in the field tests offered cost estimates based on prototype equipment for a medium range unit: If encoding and decoding equipment were purchased separately (instead of in one unit), a decoder would cost about $750, and an encoder would cost about $1,000.[150] Many manufacturers advised the Commission during the field tests that the most economical option would be to create a single unit encompassing both the encoder and decoder that will combine identical components and

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[145] See, e.g., Comments of SCTE, January 15, 1993, at 2, Comments of NCTA, January 15, 1993, at 5.

[146] See, e.g., comments of Kenneth Wright, January 15, 1993, at 3, Comments of SCTE, January 15, 1993, at 4.

[147] We estimate the total cost to the cable and broadcasting industries for the new EAS at approximately $165 million. See paras. 144 and 118, infra.

[148] See NOAA's 1992 Natural Hazards Statistics.

[149] See Appendix E, § 11.11(a).

[150] See Reply Comments of TFT Inc., November 12, 1993, at 1-4.

circuity into one chassis.[151] If such a common chassis were used, the cost of a single low-end unit would range from approximately $600 to $1,000. A medium-priced unit would cost from $1,500 to $2,500. Mass production may bring these costs even lower. Custom units would cost more. We expect that stations in low risk areas that have infrequent natural or man-made emergencies will choose less expensive models with fewer capabilities. Stations in higher risk areas will activate the EBS more frequently and are likely to choose costlier equipment with more sophisticated capabilities.

118. The entire cost of the new EAS equipment to the broadcast industry, approximately 14,000 broadcasters, could be as low as $8.7 million. This estimate could be reduced to the extent that stations are co-located because our new rules allow one set of EAS equipment to be used to serve co-located stations.[152] In addition, as noted above, broadcasters will be able to use most of the peripheral connections that they now use, with their existing EBS equipment. Depending on the station's setup, installation costs could add an additional five to ten percent to the equipment costs.

119. Broadcasters' operating expenses for the new EAS will be lower than for the current EBS. The new equipment will not require trained operators, and remote automatic activation will be possible. Moreover, automatic audio and video messaging will be available, as will automatic logging. One commenter estimates, after a survey of small, medium and large stations, that the new system would provide a median annual operating savings of $5,280 per station.[153] Thus, operating savings alone may pay for all or most of a broadcaster's cost to install and operate the new EAS. We will therefore permit broadcasters to purchase the new equipment as soon as it becomes available.[154]

120. The two-tone EBS devices put in place during the late 1970's are nearing the end of their reliable lifetime. If a broadcaster had to purchase replacement EBS equipment, the replacement costs would be comparable to the cost for new digital

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[151] See generally Field Test Results. We are giving manufacturers the option to build and broadcasters the option to purchase single unit equipment or separate decoder and encoder units.

[152] See Appendix E, §§ 11.51(j) and 11.52(c).

[153] See ex parte Comments of TFT, Inc., March 10, 1994, at 5.

[154] See Appendix G and Appendix E, § 11.11. See also paras. 164-170, infra.

equipment.[155]

121. Commenters and FM stations during the field testing expressed a strong interest in the use of subcarrier technologies and the RBDS standard.[156] FM broadcast stations may provide EAS emergency warnings via subcarrier using the RBDS standard before, during or after providing EAS messages on their main carrier. RBDS encoders are presently available for about $2,500 to $5,000[157] and offer services such as program identification, automatic tuning of receivers, and text messaging. For stations already equipped with RBDS encoders, the capability of sending emergency data is built in, and those stations would incur no further costs. RBDS equipment can transmit supplemental text messages and activate consumer receiving equipment.[158]

122. One manufacturer's system, for example, links, local government centers to RBDS equipped broadcast stations via dedicated Remote Pickup Unit (RPU) radios; the stations use RBDS subcarriers to contact other stations, cable operators, and the public on RBDS equipped receivers. The cost of such systems is about $2,000 to $3,000.[159] These FM stations monitor key state stations, the National Weather Radio, and local emergency operations centers via the RPU radios. AM, TV, and cable systems monitor, in turn, the key FM stations. The subcarrier RBDS data is unobtrusive since the consumer never hears the interstation signalling of the key FM stations. AM and TV broadcasters can then retransmit the data alert in-band using the EAS protocol.

123. The Commission has granted waivers of EBS requirements to broadcasters on a case-by-case basis.[160] We will

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[155] See Reply Comments of TFT, Inc., November 12, 1993, at 5 ("the 1976 two-tone EBS equipment, which averaged about $475, would cost (in today's dollars) over $1,200").

[156] See generally Comments of WBMX, December 28, 1992 and Comments of South Carolina Broadcasters Association, January 8, 1993.

[157] See comments of Sage Alerting, Inc., November 10, 1993, at Exhibit 3.

[158] See Comments of RE America, January 14, 1993, at 2.

[159] See Comments of Sage Alerting, Inc., November 25, 1992, at 12.

[160] See EBS chronological files e.g. Northwestern College Radio Network, Dec. 21, 1994; Educational Media Foundation, Nov. 22, 1993; Moody Broadcasting Network, Oct. 20, 1994. See also 47 C.F.R. Section 0.231 (a). For example, waivers have been granted

continue to grant waivers of EAS requirements in appropriate circumstances upon sufficient showing of need. The request must be made in writing to the FCC's EAS office, Compliance and Information Bureau, Washington, D.C. 20554, and must contain at least the following: (1) justification for the waiver, with reference to the particular rule sections for which a waiver is sought; (2) information about the financial status of the entity, such as a balance sheet and income statement for the previous two years (audited, if available); (3) the number of other entities that serve the requesting entity's coverage area and that are expected to install new EAS equipment; and (4) the likelihood (such as proximity or frequency) of hazardous risks to the requesting entity's audience.

Cable systems

124. The cost to cable systems of complying with the new EAS technical requirements is higher than for broadcasters because of the multichannel nature of cable systems.[161] Although installation costs may vary, projected equipment costs for cable systems appear to be between $10,000 and $15,000.[162] Cable operators must purchase a unit that contains a decoder/encoder. This unit will provide the cable operator with the ability to receive and send EAS messages. As discussed above, the cost of the basic EAS decoder/encoder is estimated at $1,000.[163] In order for the cable operator to distribute the EAS message on its system, an override device is required. The estimated cost for a cable override device (including installation) is $10,700. This figure is based on a compilation of cable manufacturers'

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to allow one set of equipment for co-located stations, to not require the purchase of decoding equipment, and for certain operator requirements.

[161] Costs vary dramatically, for example, depending on whether video or audio-only override of existing programming is required since the cost of video override is dramatically higher than audio override. Various commenters gave cost estimates for EAS equipment that varied widely depending on their assumptions regarding EAS requirements. See generally comments of NCTA and CATA, January 15, 1993; comments of Dynatech, March 15, 1993; comments of Albrit Technologies, November 12, 1993.

[162] See Public Notice DA 93-1211, October 6, 1993, Eastern and Western field test results.

[163] See para. 117, supra.

estimates for equipment used in the EBS field tests.[164] The device provides the capability to send an audio message on all of the channels of a cable system, a video interruption of all channels, and a video message on one channel. These two costs ($1,000 plus $10,700, for a total of $11,700) complete the equipment cost expenditure for the operator, and may be lower or higher ($10,000-$15,000) depending on the system and features selected. Co-located headends may use one set of EAS equipment, which would reduce this cost estimate.

125. In addition, cable systems must provide all channel video message override or a device offering an equivalent function for deaf or hard-of-hearing subscribers. Cable systems may provide all channel override rather than providing each deaf or hard-of-hearing subscriber with a special alerting device if they find it more economical to do so. See paras. 61-62, supra.[165]

126. One manufacturer who participated in both field tests, HollyAnne Corporation, manufacturer of the Safety Alert Monitor, tested special alerting device and noted that "The reviews by Gallaudet University and SHHH both stressed that the [visual information] concept was one of their choices for methods to warn the deaf and hard-of-hearing with regard to the new EBS."[166] The control unit for the set-top that would provide alerting to the deaf and hard-of-hearing device would be located at the headend site and cost between $700 and $3,000 depending upon the level of features desired. A home unit currently sells for $40 for an audio device to about $60 for a device with a visual alert and message display.

127. We understand the concern of members of the cable industry when they point out they often carry upwards of 40 channels and are anxious that the costs not be burdensome. We therefore sought additional information from manufacturers and

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[164] See Public Notice, DA 94-420, April 28, 1994 (announcing meeting to discuss role of cable systems in light of proposed changes to the EBS.)

[165] With the concerns raised by the hard-of-hearing and deaf audiences and the fact that broadcasters face similar responsibilities to provide video emergency communications, we believe that cable systems must provide all audio and video messages to these special audiences. See, e.g., Americans with Disabilities Act, 42 U.S.C. § 12101. et seq. See also n. 168, infra.

[166] See Comments of Safety Alert Monitor, November 12, 1993, at 2.

cable operators.[167] After reviewing all information, however, we conclude that it is technically and economically feasible for cable television systems to participate in EAS and that it would serve the public interest for them to do so. In order to allow them sufficient time to plan, we have also provided for phase-in of the EAS requirements for cable systems. It also appears that for purposes of cable rate regulation, the costs of complying with the new EAS rules should be accorded external cost treatment. We intend, however, to resolve the issue of external cost treatment for rate regulation purposes of costs incurred by cable operators in participating in EAS in a separate proceeding prior to the mandatory compliance date of the EAS rules for cable.[168]

V. OPERATIONAL ASPECTS OF THE NEW SYSTEM

128. This section of the Order explains how the current system will be streamlined and incorporated into the enhanced EAS operational structure. It will provide an overview of the many tasks which affect participants in EAS, including how to conduct the monthly tests, how the various emergency communications committees interact, and enhancements that will improve coordination among participants.

129. A common complaint about the current system was the terminology used to describe EBS designations and participants. The acronyms were complicated and confusing. Therefore, we are discarding the old EBS designations and creating more succinct terminology to more clearly define EAS functions. The new EAS designations are described in the new rules[169] and listed in Appendix F.

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[167] See Public Notice 42782, April 28, 1994, regarding a meeting to clarify filings made in the NPRM/FNPRM on methods to integrate cable into the EBS.

[168] To better determine the actual cost or any additional specialized cost, such as for in-home equipment for the hearing impaired, or for additional character generators, the record in the instant proceeding may also be used by the Commission in the context of determining external cost treatment for cable operators. While our preliminary view is that the costs incurred by cable operators in participating in EAS should be accorded external cost treatment, the Commission would, of course, have the right to review the reasonableness of the cable operator's expenditures in this regard, such as the choice between providing all channel video override and providing individual warning devices to hard of hearing or deaf subscribers.

[169] See Appendix E, § 11.18.

A. National procedures

130. We are, in this Order, revising emergency alert procedures at the national level to reflect the increased capabilities of the new EAS digital equipment. Presently, the Emergency Action Notification (EAN) network links the Federal government and 33 broadcast and cable networks and wire services. The Primary Entry Point (PEP) system includes 37 broadcast stations (now designated as National Primary (NP) EAS sources) as a backup to the EAN network. Under EAS, National Primary (NP)[170] stations will be able to disseminate national, regional, state or local emergency alerts and tests using the digital codes as a backup to the National Emergency Action Notification (EAN) network. The FCC and FEMA will study whether national level EAS messages can be digitally authenticated among the Federal government, the broadcast networks, cable programmers, and wire services, and their affiliates and subscribers. We intend to expand the EAN to include other technologies as they become viable in order to reach audiences not connected to cable systems.

B. State and local area procedures

131. The structure of the EBS system has been faulted as heavily as the equipment. A frequent lament of participants in the current system has been the unevenness of the effectiveness of the EBS from state to state and from one local operational area to another. EBS has been extremely successful in some states because of the dedication of the State Emergency Communications Committee (SECC) and the Local Emergency Communications Committee (LECC) in training new personnel, developing and updating SECC and LECC operating plans, holding coordinated tests, and ensuring that the plans are properly executed during emergency situations. These committees make technical and operational recommendations to state or local area authorities involved in emergency communications; serve as liaison with the FCC; and maintain liaison with appropriate industry committees at the national, state and local levels.

132. The SECCs will continue in their invaluable advisory and functional work. A SECC is organized in each of the 50 states, Guam, Puerto Rico, the Pacific Islands, the Virgin Islands, and the District of Columbia. We expect these committees to reorganize to include cable systems and other industry participants that can contribute to the dissemination of emergency communications. We expect the SECCs to hold elections for positions, to organize training, and to approve the policies and procedures for EAS operations, tests and activations within their domain. We anticipate that each SECC will have a Broadcast

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[170] See Appendix F for Glossary of Terms.

Co-Chair and Cable Co-Chair to ensure that their industries are fully participating in the development of state emergency plans. The Co-Chairs should chair each meeting of the SECC and should also ensure that the SECC membership list is kept current. The SECCs will develop and oversee state or local area monthly on-air testing of the system. Any local area without a plan, or that has not had a plan approved as a part of their state plan, must follow the test schedule and script for EAS procedures established by the SECC. Members of the SECC may also include the Chair and Vice-Chair of any LECCs that are formed within the State or Territory. All EAS participants are eligible to serve on their respective SECCs.

133. We anticipate that each state will organize meetings to determine whether their state or any local areas need to be reapportioned. For example, certain larger states, such as California, may elect to divide into two committees, or some local areas may decide to combine.

134. State and local plans will become even more important under EAS because they will specify which alerts will be transmitted by key EAS sources in a State and local area. To provide stronger and more effective SECC plans, we strongly recommend that each emergency communications committee chair begin the development of an updated plan for distribution to all SECC participants and interested parties. This plan should provide for (1) improved mapbooks[171]; (2) reliable activations; (3) more effective monthly on-air testing; (4) adequate feedback mechanisms to the National Advisory Committee (NAC); and (5) better utilization of auxiliary entities (i.e., amateur radio, utility companies, nuclear plants).

135. All authorized sources for initiating EAS alerts should be approved and included in the state or local plan.[172] Franchising authorities seeking to use EAS for local alerts must participate in the state and/or local emergency communications committee and be included in the corresponding plan. This information will be vital to the stations and to the cable systems monitoring those sources. Plans developed by the SECC, or LECCs must be reviewed by the FCC prior to implementation to ensure that they are consistent with national plans, FCC

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[171] The FCC mapbooks contain stations and cable systems in a state, organized by their EAS local area and any special designations needed to identify their role in the system.

[172] As with the current system, local officials and in the case of cable, the designated franchising authority official, will have the ability to send emergency messages over the EAS with the recommendations and approval of the LECC, the SECC and the FCC.

regulations, and EAS operation.[173]

C. Advisory Committee

136. To assist in improving the effectiveness of EAS and to enhance the ability to provide advice, policy guidance and emergency communications coordination quickly to the FCC, we will revise the existing EBS Advisory Committee (EBSAC). The EBSAC has, through the years, provided the FCC with recommendations concerning emergency communications policy, plans and procedures. EBSAC consists of several hundred persons, however, making it very difficult to call meetings and respond quickly to issues. In accordance with the General Service Administration's Final Rule on Federal Advisory Committee Management[174], we intend to amend the EBSAC's charter membership. The EBSAC will be renamed the National Advisory Committee (NAC). The initial charter for the NAC will be for two years and will be subject to renewal.[175]

137. The NAC will provide coordination and critical direction in the implementation of the new rules and regulations for the EAS. It will advise the Commission on all matters concerning the EAS including, but not limited to, policies, technology utilization, procedures, training, education, and interface with the public and various industries wishing to be a part of the EAS. The new membership of the NAC will be composed of a small body of volunteer government and industry personnel selected by the FCC. It will include government officials involved in emergency communications, representatives of special audiences, and State Emergency Communications Committee (SECC) members. It will recommend the new guidelines for the operational functions of the EAS. Its new functions will include, but not be limited to, studying and submitting recommendations for emergency communications policies, plans, systems and procedures for all FCC licensed and regulated industries in order to provide continued emergency communications services under conditions of crisis or national emergency. NAC will also assist the Commission in educating the cable industry and other new participants on EAS.

138. Officers of the NAC will be elected for two year terms and will include representatives from the broadcasting, cable, and satellite industries, as well as other voluntary participants. All members of Commission advisory committees are volunteers. They are not reimbursed for attending meetings and travel at their own expense.

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[173] See Appendix E, Part 11.

[174] 41 C.F.R. §§ 101-106.

[175] Federal Advisory Committee Act, 5 U.S.C. App. 2.

D. FEMA/NWS/FCC/industry coordination

139. With changes occurring rapidly in the field of emergency communications, it is necessary to strengthen coordination between the entities that are responsible for executing provisions of the EAS. The FCC will continue to work with the Federal Emergency Management Agency, the National Weather Service, and industry to enhance the new EAS. To this end, the Memorandum of Understanding (MOU) between the FCC, FEMA, NWS, and the old EBSAC will be updated by the respective parties. Primary Entry Point (PEP) stations[176] will be a component of the EAS, and the PEP Advisory Committee will be included in the revised MOU.

140. We intend that a coordinated FCC, FEMA and NOAA education and training program will be developed to teach emergency managers and other public service providers how to use the new EAS effectively to save lives and property. Additionally, the agencies will work together to reexamine the Broadcast Station Protection Program[177] and the revision of all state and local plans.

E. Instructional services

141. We have identified several areas that can immediately benefit from training and education initiatives. Some excellent suggestions were filed by commenters on training for EAS participants. The Society of Broadcast Engineers suggested that the FCC create more positive initiatives to integrate emergency communications information into the routine functions at broadcast stations.[178] The Westinghouse Broadcasting Company said: "The new EBS structure might also be taught in our public schools as part of a safety and first aid curriculum."[179]

142. EAS Operating Handbook. To avoid confusion with the many current forms used by the EBS staff, we will update our informational materials to enhance the effectiveness of the new EAS. The EBS Checklist will be replaced with the EAS Operating Handbook. The Handbook will contain in summary form the actions

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[176] The PEP are the key broadcast stations throughout the U.S. which together can provide national emergency information in the event that the primary national alerting methods are inoperable.

[177] See Appendix F for Glossary of Terms.

[178] See Comments of the Society of Broadcast Engineers, SBE FCC Liaison Committee, January 15, 1994, at 10.

[179] Comments of Group W, January 15, 1993, at 18.

required of broadcast stations, cable systems, and other participating entities upon receipt of emergency notifications, terminations, tests, and state and local alerts. It will also contain monitoring guidelines and examples of EAS codes. A copy of the Handbook must be located at normal duty locations and be immediately available to staff responsible for authenticating messages and initiating actions.

143. Mapbooks. The FCC mapbooks list locations of stations and cable systems in a state, organized by their EAS local area and any special designations needed to identify their role in the system. The mapbooks are developed by the Commission based on the state and local area plans. They are distributed to all broadcast stations, to all cable systems, and to other parties who are interested in participating in EAS.

144. Video and Audio Training Aids. As a result of the field tests we held, potential users of the EAS said instructions on how to use the new equipment would be necessary. Because the new EAS will have a potential 30,000 participants, we have decided to require all manufacturers, when delivering EAS equipment to broadcast stations and cable systems, to include an instruction manual and video tape on how to install, operate and program EAS equipment.[180] We also plan to produce a videotape which will walk participants through the operations of EAS from test to activation.

145. Use of Public Service Announcements (PSAs) and Commercial Sponsorships. In the NPRM/FNPRM the Commission sought comments on permitting the use of PSAs to heighten awareness of the new system and to permit commercial sponsorship of EBS tests to foster goodwill. Several commenters offered suggestions on how these announcements could be integrated into a public awareness effort, including the use of infomercials. There was some concern that any PSAs or commercials clearly not be a part of the test or activation. One commenter suggested that in order to avoid confusing the public or extending the stations' tests, any PSAs or commercials should also not use the new tone or codes.

146. To assist efforts to promote the new EAS, we will permit the use of PSAs or commercial sponsorship for announcements or infomercials explaining EAS to the public. Such announcements may be run at any time, but cannot be a part of the actual test or activation, and may not simulate or attempt to copy alert tones. If the announcement is run near the time of a test, it must be done before the EAS digital header code or after transmitting the EOM code.

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[180] See Section 11.34 of the new rules.

VI. FURTHER NOTICE OF PROPOSED RULE MAKING

A. Further issues regarding cable systems

147. While the Commission has determined that cable participation is mandatory, there are related subsidiary issues that we believe require more extensive information. In this section, we seek further comment on a number of proposals regarding cable, MDS, SMATV, and Video Dial Tone (VDT).

148. Small cable system considerations. NCTA in their filings has continued to request that small systems be excluded and that there be a phase-in period for larger systems.[181] We realize that the cable industry is undergoing dramatic change and that cost of participating in the EAS must be planned and budgeted. Furthermore, because the cable industry may need more time to examine the best way to integrate EAS equipment into the headend, and because cable is being required for the first time to participate, we are allowing all cable systems an additional year for required equipment purchases beyond what is required of broadcasters.[182]

149. After examining the comments and data compiled thus far in this proceeding, we find that we would like more information to evaluate and balance the competing interests regarding the participation of "small" cable systems. Therefore, we have determined that the best course of action is to seek further comment on whether the obligations imposed by this order on cable systems generally should be waived or modified for some systems, in particular, for "small" systems or, whether an exemption should apply to those systems.

150. As discussed earlier at para. 123, there are waiver standards for broadcast participation in EBS and in the new EAS. The waiver process allows broadcasters to seek relief from certain requirements on a case-by-case basis. Therefore, we believe it is fitting to also seek comment on whether a similar waiver policy or a broader exemption would be equally appropriate for cable systems. Section 624(g) of the Communications Act requires the Commission to prescribe standards "to ensure that viewers of video programming on cable systems are afforded the same emergency information as is afforded by the emergency broadcasting system pursuant to Commission regulations...." We ask for comment on whether an exemption or special waiver policy for small cable systems is consistent with this mandate in light of the fact that we now provide waivers for broadcast stations.

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[181] Comments of NCTA, November 12, 1993, at 3-4.

[182] See paras. 169-170, infra.

151. We seek comments on the size standard that the Commission should adopt in defining small systems. In particular, we seek comments on whether we should adopt the Small Business Administration[183] definition of small cable systems. That standard defines small businesses as those with annual gross revenues of less than $11 million. Alternatively, should the definition be based on some other figure for gross revenue, some other criterion such as number of subscribers, or some other combination of these criteria? For example, should we define small cable systems based on the number of subscribers, such as 5,000 or fewer, or even 1,000 or fewer? To assist us in our determination, we seek comments on the costs and benefits of cable participation in EAS associated with the size standards proposed herein, or any other size standard described by the commenters. In this regard, we seek comment on whether the Commission should exempt all cable systems meeting certain size criteria or whether we should proceed by waiver on a case-by-case basis taking into consideration size of the system as one of several factors. We also seek comment as to other factors that would be relevant to a waiver determination.

152. Second, we seek comments on whether availability to small cable system subscribers of alternative sources of emergency information should be a factor relevant to the determination to waive or exempt participation by any cable system. If so, how should that factor be measured and weighed in the decision? In this connection, we also seek comments on whether there are other circumstances that would weigh in favor of or against affording exemptions to small cable systems. For example, should a small cable system be exempt from EAS participation in an area where there are no other radio or television stations?

153. Potential preemption of state and local standards. The rules we adopt today serve only as a floor for cable systems' participation in the EAS. Our EAS rules only require national emergency announcements. Over 4,000 cable systems, however, have local emergency announcement requirements in their franchises. Many local jurisdictions, such as those near nuclear power plants or on flood plains, may have special emergency alerting needs. We encourage local officials to permit cable operators to remove equipment installed under local franchising agreements and convert to EAS equipment. We seek further comment as to whether

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[183] Under the Small Business Act, the Commission is required to use small business definitions created by the Small Business Administration (SBA) with regard to any regulation applicable to small businesses, unless other statutory definitions are applicable. In the alternative, the Commission may adopt small business size standards different than those developed by the SBA, subject to SBA approval.

the existence of conflicting requirements imposed by local franchising authorities poses any threat to the federal objective of maintaining EAS nationwide alerting capability and, if so, whether we should preempt application of these conflicting requirements.

B. Services under further consideration

154. In this Order, we have identified broadcasting and cable as mandatory participants in EAS. We have encouraged the voluntary participation of satellite, DBS, telephone and cellular carriers, public service providers and other services such as Digital Audio Radio and HDTV as they come on line. In this section, we seek further comments on whether additional services should be required to participate or whether their participation should be voluntary.

155. In the NPRM/FNPRM, the Commission sought comments on including services such as Multipoint Distribution Service (MDS)[184], Satellite Master Antenna Television Systems (SMATV) and others in the new EAS.

156. Commenters who addressed these proposals supported allowing all services to participate in the EAS. The majority pointed to the proliferation and speed with which new services are being developed and the need for a framework that can accommodate this growth. This concern was exemplified by one commenter who stated "We must replace the old system with a new system that is not only technically advanced today, but will be advanced and expansive after the turn of the century."[185] Several entities in the satellite industry filed comments supporting the inclusion of satellite technology and DBS in any new system.[186] The National Cable Television Association (NCTA)

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[184] Multipoint Distribution Service (MDS) includes frequencies allocated for Multichannel Multipoint Distribution Service (MMDS). In this Order MDS will be used to refer collectively to single channel and multiple channel MDS. In addition, applicants may lease Instructional Television Fixed Service (ITFS) frequencies on a part-time basis for MDS use. Also applicants may apply for vacant ITFS channels for commercial purposes, subject to certain restrictions. Collectively, these frequencies when used to deliver video programming are referred to as "wireless cable" services. See 47 C.F.R. Part 21 Subpart K.

[185] Comments of the EBS WACO Operational Area, February 16, 1993, at 3.

[186] See Comments of United States Satellite Broadcasting Company, Inc., January 15, 1993, at 2.

and the Community Antenna Television Association (CATA) voiced their support for "incorporating new technical advances and promoting interoperability with all technologies including broadband cable, fiber optics and satellites."[187]

157. We agree with commenters that it is important to include all services that are interested in and capable of providing emergency communications to the public.[188] We recognize that different services and technologies offer unique alerting techniques. To incorporate the benefits of varied services and technologies, we have designed the EAS equipment to use a digital signalling protocol that is usable by all services. We seek comments on whether the specific services discussed below should be required to participate.

Multipoint Distribution Service (MDS)

158. MDS, or "wireless cable," is a service that delivers information and programming to a preselected audience within a community. A local MDS station transmits programming over the air on microwave frequencies to a special receiving antenna located on the subscriber's roof. This antenna takes the microwave signals and feeds them into a converter that puts the information on VHF channels of conventional televisions sets.

159. We propose that MDS system operators be required to have EAS decoders. This will ensure that they will be able to receive alerts and transmit them to their subscribers, either automatically or manually. We propose that they not be required to have EAS encoders but encourage[189] them to do so.[190] During an alert, we propose that MDS systems provide: (1) an all channel audio message override; 2) momentary video interrupt of short durations on all channels; 3) at least one video message override channel; and 4) either all channel override or an alternative means of providing alerting information to hearing impaired or deaf subscribers.

160. Participation by MDS service providers in EAS would be required for both exclusive and leased channels (i.e., at times

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[187] See comments of NCTA and CATA, January 15, 1993, at 1.

[188] See III.C. "Voluntary Participants in the New System," supra.

[189] See para. 59, supra.

[190] MDS system operators do not have to purchase encoders because there will not be other stations or cable systems monitoring them for EAS. MDS stations, however, will retransmit EAS messages.

an ITFS channel is used for MDS). The level of participation would be equivalent to the standards that will be required of cable systems. Although this requirement would not apply to ITFS licensees, the Commission is interested in carriage of EAS alerts and warnings by MDS operators regardless of the frequencies used. We seek further comment on the appropriate role for MDS providers in EAS, how MDS participation should be structured, and on the costs and benefits of MDS participation in EAS. We also seek comment on whether any MDS systems should be exempted. In concordance with the issues that we raised concerning exemptions for small cable systems, see paras. 148-152, supra, we seek comments on the factors that should be taken into consideration in exempting any MDS systems. Finally, we seek comment on the timetable for MDS participation if mandatory participation is ordered.

Satellite Master Antenna TV (SMATV)

161. In earlier Commission action[191] the National Private Cable Association claimed a potential market of 17 to 22 million SMATV subscribers and noted the valuable service they provided to customers. As discussed elsewhere, it is important to the safety of life and property for all service providers with a substantial audience or subscriber base to participate in the EAS. We seek further comments on whether participation in EAS by SMATV should be mandatory or voluntary, and on the costs and benefits of their participation in EAS. We also seek further comments on the timetable for SMATV participation if we determine that its participation should be mandatory.

162. Although the rules in Part 11 do not require SMATV systems to participate in EAS[192], they are encouraged to do so. If they elect to participate, they are expected to follow the same guidelines and rules which are laid out for cable service providers. For those SMATV entities, as well as smaller cable systems and MDS providers, that elect at this time to voluntarily provide EAS to their customers, they are encouraged to follow the same implementation timetable as cable.

Video Dial Tone

163. We recently finalized our policies establishing the regulatory framework for telephone companies to deliver video programming on a common carrier basis and to engage in certain

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[191] See FCC Report to Congress on Cable Television, 5 FCC Rcd 4962 (1990).

[192] See Appendix E, §§ 11.11, 11.51 (h).

other unregulated activities.[193] We anticipate that telephone companies will begin the commercial provision of such "video dial tone" in the relatively near future. We solicit comment on whether provision of such services should be subject to EAS requirements, and if so, whether they should be the same as, similar to, or different from those we are mandating for cable systems. Parties should comment on the question of whether participation in EAS may constitute the provision of video programming and whether the obligation to participate in EAS should be imposed on the common carrier video dialtone service provider or the programmer customer. Parties should address the similarities or differences between video dialtone service and cable service in discussing application of EAS requirements to video dialtone.

VII. IMPLEMENTATION TIMETABLE

164. There was some discussion in the comments regarding whether existing emergency systems in broadcast and cable facilities, some with very advanced technology, must be replaced with the proposed new equipment. Those commenters suggested that flexibility should be afforded to systems that have existing equipment so they might implement the new scheme with existing equipment, and possibly phase out existing equipment over a number of years. One commenter suggested that "[T]he system should be able to be accomplished at reasonable cost and that the program as it applies to cable systems not render obsolete existing warning equipment which many operators have already installed."[194]

165. Various commenters have stated the need for adequate time to install new equipment: The Community Broadcasters Association noted "[I]mprovement must be balanced against allowing enough time for the equipment market place to become reasonably competitive."[195] In order to achieve the maximum benefit from the new EAS, all EAS participants must have equipment that is compatible with a common digital alerting protocol.

166. We have developed a timetable to phase out existing equipment and to phase in the new digital EAS equipment. The

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[193] See Telephone Company-Cable Television Cross-Ownership Rules, FCC 94-269, released November 7, 1994 ("Video Dial Tone Order.")

[194] Comments of Cablevision Industries Corp., January 15, 1993, at 2.

[195] Comments of the Community Broadcasters Association, January 15, 1993 at 4.

time allotted reflects our assessment, based on the record in this proceeding, of the lead time needed by industry to develop, produce, and install new equipment balanced against the public interest in rapid implementation of the new EAS. Broadcasters, cable operators, engineers, utility companies and others frequently inform us they are seeking estimates to budget new equipment, request waivers of the requirement to repair broken EBS equipment, and inquire into the status of this rule making, which might require them to upgrade their facilities. Therefore, pursuant to provisions outlined in this Order, all EAS participants, regardless of service, are required to purchase prescribed equipment subject to any waiver or exemption policy.[196] All participants may take advantage of the phase-in periods in order to budget for the purchase the new equipment.

167. Broadcasters. Broadcasters have long been the backbone of the EBS. We want them to be able to implement the new EAS quickly to realize the cost and operational advantages of the new system. Therefore, we are requiring that broadcasters replace EBS equipment with EAS equipment according to the following timetable: from the date of adoption of this Order until July 1, 1996, the new equipment will be optional for broadcasters.[197] After that date the equipment will be required. There will be a one year overlap, or "debugging" period from July 1, 1996 to July 1, 1997 to ensure that the new architecture is effective and the equipment is operational. The old EBS equipment must be retained and kept operational during this debugging period. After July 1, 1997, the old two-tone signal will be used as an actual alert signal and not for testing or interstation signalling.

168. More specifically: (1) existing two-tone decoders at broadcast stations must be modified by July 1, 1995 to be capable of decoding the shortened 8 second two-tone signal; (2) after July 1, 1995, stations may transmit the shortened two-tone attention signal for not less than eight seconds nor more than 25 seconds;[198] (3) use of the new EAS digital signal is optional

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[196] The timetable we establish in this Order will allow manufacturers ample opportunity to obtain FCC type acceptance and certification for their new equipment and to produce enough units to supply 13,000 broadcast stations and over 10,000 cable systems.

[197] See Appendix E, § 11.11 and Appendix G for specifics of the transition period.

[198] Stations that alert locations that have unmodified or old decoders should continue to transmit at least 20 seconds of two-tone to ensure that those locations are alerted to emergencies.

until July 1, 1996 for broadcast stations; (4) key EAS sources are advised to begin using the new digital signal as soon as equipment is available; (5) after July 1, 1997, the two-tone must be used only as an audio alert signal for the monthly test and actual emergency messages; and (6) class D FM and low power television stations must have decoders according to the above timetable for broadcasters.

169. Cable. Because the cable industry is a newcomer to EAS and will likely require a longer time period to integrate the equipment into facilities, to consolidate headends further, and to implement new plant configurations, we will grant cable systems an additional one year to install EAS equipment. Cable systems must provide all audio override and video on at least one channel and must comply with provisions of the rules (see Appendix E) by July 1, 1997. For entities that elect at this time to voluntarily provide EAS to their customers, they are encouraged to follow the same implementation timetable as cable.

170. In order to encourage rapid manufacture and deployment of the new EAS equipment, we will authorize immediate use of the equipment on an EAS state or local area basis. This includes performing the new monthly on-air and weekly unobtrusive tests in lieu of the existing weekly on air two-tone tests. Authorization can be obtained through written request to the Commission's EAS office after all broadcast stations in an EAS local area have installed new EAS required equipment, demonstrated representation of cable systems in their state or local emergency communications committee plans, and complied with the new Part 11 requirements. At that time, the old EBS equipment may be removed.

VIII. CONCLUSION

171. With this Report and Order/Further Notice of Proposed Rule Making, we adopt new rules for the establishment of an Emergency Alert System that is designed with a flexible architecture to accommodate current and future technologies and that will deliver instantaneous emergency information to the public. The new rules will require the participation of broadcast and cable systems and encourage additional voluntary participation by eliminating many of current obsolete technical requirements and operational burdens. The new system will emphasize speed, reliability, and efficiency.

172. We will also be seeking further comment on how MDS, and SMATV and VDT should participate in EAS and whether a defined class of "small" cable systems should be excused from participation.

173. This new system will give greater protection to the American public during emergencies regardless of their activity, special language needs, or individual impairments. The new rules

adopted by this Order provide a variety of options for sending and receiving emergency alerts. They are flexible enough to allow for future changes in technologies and consumer products in ways we cannot presently predict, but for which we must be prepared.

IX. PROCEDURAL MATTERS

A. Final Regulatory Flexibility Analysis

174. Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. § 603, the Commission's final regulatory flexibility analysis for the foregoing Report and Order is as follows:

I. **Need and Purpose of this action:** Technologies have dramatically improved since the last major modifications to the EBS. The new EAS will significantly improve the ability to safeguard the American public during emergencies and ensure that there is compatibility in equipment through the adoption of new emergency alerting equipment. A new operational structure will streamline and enhance the efficiency of the EAS, a new rule section will prohibit the unauthorized transmission of the EAS alerting signal, and new special codes will be utilized to ensure the public's safety.

II. **Summary of the issues raised by the public comments in response to the Initial Regulatory Flexibility Analysis:** There were no comments submitted in response to the Initial Regulatory Flexibility Analysis.

III. **Significant alternatives considered:** There were no significant alternatives considered that could better accomplish the modernization of the presently outdated EBS.

B. Initial Regulatory Flexibility Analysis

175. Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. § 603, the Commission's initial analysis for the foregoing Further Notice of Proposed Rule Making is as follows.

176. **Need and Objectives of this Action:** Cable systems who are required to participate in the EAS will have to make an initial capital investment to do so. The Commission is concerned that such a requirement could prove burdensome for some smaller cable systems and therefore seeks comment on whether and to what extent smaller cable systems should not have to participate in the EAS. The Commission also seeks further comments on how cable companies should recover any cost of participating in the new EAS. The Commission asks whether additional technologies such as the Multipoint Distribution Service, Satellite Master Antenna Television and Video Dial Tone should be required to participate in EAS. Finally, the Commission seeks comment on whether and to

what extent additional or more stringent requirements imposed by local franchising authorities for emergency alerting pose a threat to the federal purpose and should be preempted.

177. **Legal Basis:** This action is proposed in accordance with Sections 1, 4(i) and (o), 303(r), and 624(g) of the Communications Act of 1934, as amended, 47 U.S.C. §§151, 154(i) and (o), 303(r) and 624(g).

178. **Description, Potential Impact and Number of Small Entities Affected:** There are approximately 11,000 cable systems who are required to participate in the EAS. Depending on whether and to what extent the Commission decides to waive participation by smaller cable systems in the EAS, some portion of these systems will not be required to purchase the EAS equipment and participate in EAS. There are an unknown number of MDS licensees in operation and an unknown number of unregulated SMATV systems in existence. Most of these are likely to be small entities. If the Commission requires MDS and SMATV systems to participate in the EAS, they will have to make a capital investment to purchase necessary equipment. The size of this investment will depend on the extent to which the Commission requires them to participate in the EAS.

179. **Recording, Record Keeping and Other Compliance Requirements:** Smaller cable, MDS, SMATV, and Video Dial Tone systems would be required to keep records of when encoders and decoders are taken out of service for any modifications adopted and when they are returned to operation. This is a current requirement for participants.

180. **Federal Rules which Overlap, Duplicate or Conflict with this Rule:** None.

181. **Any Significant Alternatives Minimizing the Impact on Small Entities and Existing Licensees and Consistent with the Stated Objectives:** Because the new EAS system depends for its effectiveness on all participants using the same equipment and operating procedures, there is a limited amount of flexibility, short of not requiring participation in EAS at all, that the Commission can afford without compromising the utility of EAS. Not requiring participation in the EAS at all, however, could have adverse effects on the public in case of an emergency.

182. **Comment Provision.** Pursuant to the applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules and Regulations, interested parties may file comments on or before February 22, 1995 and reply comments on or before March 24, 1995. Parties submitting comments should include any statistical data or analyses and the methodology for arriving at their conclusions in their comments. All relevant and timely comments will be considered by the Commission before

final action is taken in this proceeding. To file formally in this proceeding, Docket 91-171/91-301, participants must file an original and six copies of all comments, reply comments, and supporting comments. If participants want each Commissioner to receive a personal copy of their comments, an original plus eleven copies must be filed. Comments and reply comments should be sent to Office of Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center(Room 239) of the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554.

183. **Ex Parte Rules - Non-Restricted Proceeding.** This is a non-restricted notice and comment rule-making proceeding. Ex parte presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in Commission rules. See generally 47 C.F.R. § 1.1202, 1.1203, and 1.1206(a).

X. ORDERING CLAUSE

184. ACCORDINGLY, IT IS ORDERED that, pursuant to the authority contained in Sections 1, 4(i) and (o), and 303(r), 624(g), and 706 of the Communications Act of 1934, as amended, 47 U.S.C. § 151, 154(i) and (o), and 303(r), 544(g), and 606, Part 73, Subpart G, of the Commission's Rules and Regulations IS REMOVED in its entirety. The attached new rules are incorporated into a new Part 11 of Title 47 of the Code of Federal Regulations, as set forth in Appendix E.

185. IT IS FURTHER ORDERED, that Section 0.311 of the Commission's Rules is amended as set forth in Appendix E.

186. IT IS FURTHER ORDERED, that this Report and Order will be effective thirty (30) days after publication of a summary thereof in the Federal Register.

187. IT IS FURTHER ORDERED, that pursuant to the provisions of Sections 1, 4(i) and (o), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i) and (o), and 303(r), there is HEREBY INSTITUTED a Further Notice of Proposed Rule Making into the matters discussed above.

188. IT IS FURTHER ORDERED, that a copy of this Report and Order and Further Notice of Proposed Rule Making shall be sent to the Chief Counsel for Advocacy of the Small Business Administration.

189. For further information on this Report and Order and Further Notice of Proposed Rule Making, contact Helena Mitchell, FCC Compliance and Information Bureau, Room 720, 1919 M Street,

N.W., 20554, (202) 418-1220.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A

COMMENTS FOR FO DOCKET 91-301/91-171

1. KJQY (FM); filing city, Washington, DC
2. State of Delaware, Department of Public Safety, Emergency Planning and Operations Division; Delaware City, Delaware
3. State of Ohio Adjutant General's Department; Columbus, Ohio
4. WVMX; South Burlington, Vermont
5. WNGO-WXID; Mayfield, Kentucky
6. South Carolina Broadcasters Association; Columbia, South Carolina
7. KWFM/KWFM-FM; Tucson, Arizona
8. The South Carolina Division of Information Resource Management; filing city, Washington, DC
9. Dynatech Cable Products Group; Salt Lake City, Utah
10. EBS Waco Operation Area; Waco, Texas
11. Lee Sutherlard Parr, Broadcast Engineer; Pedlar Mills, Virginia
12. RE AMERICA, INC.; Westlake, Ohio
13. Charles William Sepmeier; Avon, Colorado
14. Broadcast Services of Colorado, Inc.; Lakewood, Colorado
15. Burk Technology, Inc.;
16. Cablevision Industries Corp.; filing city, Washington, DC
17. Capital Cities/ABC, Inc.; New York, New York
18. Consumer Electronics Group Electronic Industries Association; Washington, DC
19. Community Broadcasters Association; filing city, Washington, DC
20. CUE Network Corporation; filing city, Washington, DC
21. Gorman-Redlich; Athens, Ohio
22. Information Age Systems, Inc.; Salt Lake City, Utah
23. InterMedia Partners; filing city, Washington, DC
24. KGB-FM/KPOP (AM); San Diego, California
25. National Association of Broadcasters; Washington, DC
26. National Cable Television Association, Inc. and Community Antenna Television Association, Inc.; filing city, Washington, DC
27. National Public Radio; Washington, DC
28. New York State Commission on Cable Television; Albany, New York
29. William F. Ruck Jr., Broadcast Engineer; San Francisco, California
30. Sage Alerting Systems, Inc.; Stamford, Connecticut
31. Scientific-Atlanta; Atlanta, Georgia
32. The Society of Broadcast Engineers, Incorporated; filing city, Washington, DC
33. The Society of Cable Television Engineers; filing city, Washington, DC
34. State of New Jersey, Board of Regulatory Commissioners; Newark, New Jersey
35. TFT, Inc.; Santa Clara, California
36. Time Warner Entertainment Company, L.P.; filing city, Washington, DC

37. United States Satellite Broadcasting Company, Inc.; filing city, Washington, DC
38. Westinghouse Broadcasting Company, Inc.; filing city, Washington, DC
39. WHBC/WHBC-FM; Canton, Ohio
40. WWLI/WLKW; Providence, Rhode Island
41. Kentucky Broadcasters Association; Lebanon, Kentucky
42. Consumer Electronics Group of the Electronic Industries Association; filing city, Washington, DC
43. Kevin Mark Corwin, Student; California
44. WLBN - WLSK Radio; Lebanon, Kentucky
45. Nutmeg Broadcasting Company, Connecticut Broadcasters Association; Connecticut
46. Rhode Island Broadcasters' Association; Rhode Island
47. WSNE; East Providence, Rhode Island
48. WRVN; Lexington, Nebraska
49. San Mateo Operational Area Office of Emergency Services; Redwood City, California
50. Idaho State Broadcast Association; Boise, Idaho
51. Long Island Radio Broadcasters Association; Melville, New York
52. WTAI Talk Radio; Milbourne, Florida
53. Radio Harlan, Inc.; Harlan, Kentucky
54. Washington Area Broadcasters Association; Washington, DC
55. State of Nebraska, State Civil Defense Agency; Lincoln, Nebraska
56. AM/FM Services Company; Edmond, Oklahoma
57. WLRS-FM; Louisville, Kentucky
58. Multi-Technical Services, Inc; Clayton, North Carolina
59. Pennsylvania Emergency Management Agency; Harrisburg, Pennsylvania
60. Axcess, USA; Metairie, Louisiana
61. Jefferson County Emergency Management; Beaumont, Texas
62. Quad Dimension, Inc.; Overland Park, Kansas
63. National Weather Service; Silver Spring, Maryland
64. State of Minnesota Department of Public Safety; St. Paul, Minnesota
65. WBOY-TV; Clarkburg, West Virginia

APPENDIX B

REPLY COMMENTS FOR FO DOCKET 91-301/91-171

1. Middlesex County Emergency Management; Sayreville, New Jersey
2. KFGG Radio; Corpus Christi, Texas
3. Bell Atlantic Companies; filing city, Washington, DC
4. Capital Cities/ABC, Inc.; New York, New York
5. Dynatech; Salt Lake City, Utah
6. EBS Waco Operational Area; Waco, Texas
7. National Association of Broadcasters; Washington, DC
8. SAGE Alerting Systems, Inc.; Stamford, Connecticut
9. SCOPE CABLE TELEVISION; Blair, Nebraska
10. Time Warner Entertainment Company, L.P.; filing city, Washington, DC
11. U.S. Telephone Association; Washington, DC
12. Westinghouse Broadcasting Company, Inc.; Washington, DC
13. Kenneth A. Wright; Englewood, Colorado
14. CBS, Inc.; filing city, New York, New York
15. WDAF-AM/KYYS-FM; Kansas City, Missouri
16. Federal Emergency Management Agency; Washington, DC

APPENDIX C

COMMENTS FOR PN FO DOCKET 91-301/91-171

1. Self Help for Hard of Hearing People; Martinez, California
2. Jefferson County Emergency Management; Beaumont, Texas
3. Rohde & Schwarz; Lanham, Maryland
4. Axcess USA; Metairie, Louisiana
5. EBS Waco Operational Area; Waco, Texas
6. Information Age Systems, Inc.; Salt Lake City, Utah
7. Jefferson County; Beaumont, Texas
8. RE AMERICA; Westlake, Ohio
9. WIN Communications Inc.; Norwalk, Connecticut
10. Duke Baugh; Baltimore, Maryland
11. Nutmeg Broadcasting Company; Connecticut
12. Connecticut State Emergency Communications Committee; Wethersfield, Connecticut
13. Nicholas Lemonakis; Baltimore, Maryland
14. South Carolina Broadcasters Association; Columbia, South Carolina
15. Mountain Cablevision; Frazier Park, California
16. University of Colorado at Colorado Springs; Colorado Springs, Colorado
17. WVMX; Stowe, Vermont
18. The American Council of the Blind of Maryland; Lutherville, Maryland
19. ALBRIT Technologies Limited; New York, New York
20. Capital Cities/ABC, Inc.; New York, New York
21. CUE Network Corporation; Irvine, California
22. Data Broadcasting Corporation Group; San Mateo, California
23. Denon/Nippon Columbia; Rockaway, New Jersey
24. Hammett & Edison; Burlingame, California
25. Information Age Systems, Inc.; Salt Lake City, Utah
26. Intermedia Partners; filing city, Washington, DC
27. Middlesex County Emergency Management; Sayreville, New Jersey
28. National Association of Broadcasters; filing city, Washington, DC
29. National Cable Television Association, Inc.; Fairfax, Virginia
30. Safely Alert Monitor; Greeley, Nebraska
31. SAGE Alerting Systems, Inc.; Stamford, Connecticut
32. South Carolina Broadcasters Association; Columbia, South Carolina
33. Time Warner Entertainment Company, L.P.; New York, New York
34. TFT Inc.; Santa Clara, California
35. Richard T. Walsh, Vice President/Chief Engineer;
36. Mountain Cablevision, Inc.; New York, New York
37. Country Cable, Inc.; San Diego, California
38. Centro de instrumentacion y registro sismico, a.c.; Mexico City, Mexico
39. Idea/onics; Mayville, North Dakota
40. Northern Virginia Resource Center for Deaf and Hard of Hearing Persons; Fairfax, Virginia

41. The Small Cable Business Association; Coraopolis, Pennsylvania
42. National Center for Law and Deafness; filing city, Washington, DC

REPLY COMMENTS FOR PN FO DOCKET 91-301/91-171

1. Data Broadcasting Corporation; San Mateo, California
2. Idea/onics; Mayville, North Dakota
3. The National Cable Television Association, Inc., and The Cable Telecommunications Association, Inc.; Fairfax, Virginia
4. WANN (AM); Annapolis, Maryland
5. Dynatech; Salt Lake City, Utah
6. Electronic Industries Association; Washington, D.C.
7. HollyAnne Corporation; Greely, Nebraska
8. Sage Alerting Systems, Inc.; Stamford, Connecticut
9. TFT, Inc.; Santa Clara, California
10. Albrit Technologies Limited and Altronix Systems Corp.; New York, New York

APPENDIX D

FIELD TEST PARTICIPANTS

Western Test - Denver, Colorado

1. Amateur Radio Operators: KBOHIO; Thorton, Colorado: NOLDZ; Thorton, Colorado: NOOMA; Westminster, Colorado: KOZL; Arvado, Colorado: NOTAO; Golden, Colorado: WD8RJK; Littleton, Colorado: NOPDB; Denver, Colorado
2. CADCO; Garland, Texas
3. California Office of Emergency Services; Sacramento, California
4. Capital Cities/ABC; New York, New York
5. CMBE; Denver, Colorado
6. Colorado - SECC Chair; Lakewood, Colorado
7. Colorado Division of Disaster Emergency Services; Golden, Colorado
8. Colorado State University; Denver, Colorado
9. Cue Network Corp.; Irvine, California
10. Dynatech; Salt Lake City, Utah
11. EBS Advisory Committee; Hollywood, California
12. Electronic Industries Association; Washington, DC
13. Federal Communications Commission; Washington, DC; Lakewood, Colorado; Baltimore, MD; Grand Island, Nebraska
14. Gorman - Redlich Manufacturing; Athens, Ohio
15. Federal Emergency Management Agency; Denver, Colorado
16. Hammett & Edison; San Francisco, California
17. Information Age Systems; Salt Lake City, Utah
18. Information Systems Laboratories, Inc.; Vienna, Virginia
19. JC Humke and Associates; Aurora, Colorado
20. KBNO AM (Spanish language station); Denver, Colorado
21. KCFR-FM, NPR Network; Denver, Colorado
22. KCNC-TV; Denver; Colorado
23. KOA-AM; Denver; Colorado
24. KRFX-FM; Denver; Colorado
25. KRMA-TV; Denver; Colorado
26. National Public Radio; Washington, DC
27. National Telecommunications and Information Administration; Boulder, Colorado
28. National Weather Service; Denver, Colorado
29. NEMAR; Dallas, Texas
30. NOAA NWS; Kansas City, Missouri
31. Public Service Company of Colorado; Denver, Colorado
32. SAGE; Stamford Connecticut
33. SAM; Greeley, Nebraska
34. Self Help for Hard of Hearing People; Martinez, California
35. Society of Cable Television Engineers; Englewood, Colorado

36. Storm Watcher; Jackson, Mississippi
37. TCI of Colorado; Englewood, Colorado
38. TFT; Santa Clara, California
39. Time Warner Cable; Englewood, Colorado
40. University of Denver, Mass Communications Department; Denver, Colorado
41. WANN; Annapolis, Maryland
42. WBAL AM/TV, WIYY (FM); Baltimore, Maryland

Eastern Test - Pikesville, Maryland

1. Adelphia Cable Communications; Staunton, Virginia
2. Altronix Systems Corporation; Denville, New Jersey
3. ARRL; College Park, Maryland
4. Axcess USA; Metairie, Louisiana
5. Baltimore County Office of Emergency Preparedness; Towson, Maryland
6. Baltimore Gas and Electric; Baltimore, Maryland
7. CAN/AM Consulting Limited; Queenstown, Maryland
8. Capital Cities/ABC; New York, New York
9. Carroll County Emergency Management; Westminster, Maryland
10. City of Annapolis Public Transportation; Annapolis, Maryland
11. Colorado - SECC Chair; Lakewood, Colorado
12. Comcast Cablevision of Maryland, Inc.; Timonium, Maryland
13. CUE Network; Irvine, Calfornia
14. Denon America; Rockaway, New Jersey
15. Dynatech; Salt Lake City, Utah
16. EBSAC Technical Standards Chair; Whittier, California
17. Electronic Industries Association; Washington, DC
18. Federal Communications Commission; Washington, DC; Baltimore, Maryland; Columbia, Maryland
19. Gallaudet University; Washington, DC
20. Gorman Redlich Manufacturing; Athens, Ohio
21. Hartford County Division of Emergency Operations; Forest Hill, Maryland
22. Hollyanne - SAM; Greeley, Nebraska
23. Howard County Office of Emergency Management & Civil Defense; Columbia, Maryland
24. IDB Broadcast; Washington, DC
25. Information Age Systems; Salt Lake City, Utah
26. Information Systems Laboratories, Inc.; Vienna, Virginia
27. Maryland Emergency Management Agency; Pikesville, Maryland
28. Maryland Public Television; Owings Mills, Maryland
29. National Association of Broadcasters; Washington, DC
30. National Weather Service; Baltimore, Maryland
31. Prince George's County Office of Emergency Prepardness; Landover, Maryland
32. SAGE; Stamford, Connecticut
33. SECC, Louisiana; Hammond, Louisiana

34. SECC, South Carolina; Florence, South Carolina
35. Society of Broadcast Engineers; Baltimore, Maryland
36. Society of Cable Television Engineers; Stauton, VA
37. Television For All; Silver Spring, Maryland
38. TFT, Santa Clara, California
39. U.S. Satellite Broadcasting Co., Inc.; St. Paul, Minnesota
40. United Artist Cable of Baltimore; Baltimore, Maryland
41. WAMD; Aberdeen, Maryland
42. WANN; Annapolis, Maryland
43. WBAL-AM/TV, WIYY-FM; Baltimore, Maryland
44. WCEI AM/FM, Easton, Maryland
45. WERQ; Baltimore, Maryland
46. WJHU-FM; Baltimore, Maryland
47. WMDO AM/TV; Silver Spring, Maryland
48. WPOC; Baltimore, Maryland
49. WSCL FM - NPR Affiliate; Salisbury, Maryland

Specific individuals who represented their company may be found in the complete files of the Western Field Test and Eastern Field Test of Proposed Parameters for the Modernization of the Emergency Broadcast System.

APPENDIX E

Chapter I of Title 47 of the Code of Federal Regulations is amended by deleting Subpart G of Part 73, adding a new Part 11, and amending Parts 0, 73 and 76 as follows:

I. Part 0--COMMISSION ORGANIZATION

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

Authority: Secs. 5, 48 Stat. 1068, as amended; 47 U.S.C. 155.

2. Section 0.182 is amended by revising the title and paragraph (d) to read as follows:

§ 0.182 Chief, Compliance and Information Bureau.

(a) * * *
(d) Provides administrative support for the National Advisory Committee (NAC).

* * * * *

3. Section 0.183 is amended by revising the text to read as follows:

§ 0.183 Emergency Communications Administration.

The Compliance and Information Bureau coordinates the National Security and Emergency Preparedness (NSEP) activities of the Federal Communications Commission including Continuity of Government Planning, the Emergency Alert System (EAS) and other functions as may be delegated during a national emergency or activation of the President's war emergency powers as specified in section 706 of the Communications Act; maintains liaison with FCC Bureaus/Offices, and other government agencies, the telecommunications industry and FCC licensees on NSEP matters; and, as requested, represents the Commission at NSEP meetings and conferences.

* * * * *

4. Section 0.284 is amended by deleting existing paragraph (a)(4) and resequencing existing paragraphs (a)(5) through (a)(10) as (a)(4) through (a)(9), respectively.

* * * * *

5. Section 0.311 is amended by revising paragraphs (g) and (h) to read as follows:

§ 0.311 Authority delegated.

* * * * *

(a) * * *

(g) The Chief, Compliance and Information Bureau is delegated authority to grant waivers of the requirements of Part 11 of this Chapter to participants required to install, operate or test Emergency Alert System (EAS) equipment. The Chief, Compliance and Information Bureau is further authorized to delegate this authority. Waiver requests must made in writing and forwarded to the FCC's EAS office 1919 M Street, NW Washington, DC 20054. Such requests must state the reason why the waiver is necessary and provide sufficient information such as, statements of fact regarding the financial status of the broadcast station, the number of other broadcast stations providing coverage in its service area or the likelihood of hazardous risks to justify a grant of the waiver.

(h) The Chief, Compliance and Information Bureau is delegated authority to execute in the name of the Commission all agreements pertaining to the loan of United States Government property to broadcast stations or other entities participating in the Emergency Alert System (EAS) for national defense purposes. The Chief, Compliance and Information Bureau is authorized to delegate this authority.

* * * * *

II. A new Part 11 is added to read as follows:

PART 11-EMERGENCY ALERT SYSTEM (EAS)

Subpart A - General

Sec.

11.1 Purpose.
11.11 The Emergency Alert System (EAS.
11.12 Two-tone Attention Signal Encoder and Decoder.
11.13 Emergency Action Notification (EAN) and Emergency Action Termination (EAT).
11.14 EAN Network and Primary Entry Point (PEP) System.
11.15 EAS Operating Handbook.
11.16 National Control Point Procedures.
11.17 Authenticator Word Lists.
11.18 EAS Non-participating National Authorization Letter.
11.19 EAS Designations.
11.20 State Relay Network.
11.21 State and Local Area Plans and FCC Mapbook.

Subpart B - Equipment Requirements

11.31 EAS protocol.

11.32 EAS Encoder.
11.33 EAS Decoder.
11.34 Acceptability of the equipment.
11.35 Equipment operational readiness.

Subpart C - Organization

11.41 Participation in EAS.
11.42 Participation by communications common carriers.
11.43 National level participation.
11.44 EAS message priorities.
11.45 Prohibition of false or deceptive EAS transmissions.
11.46 EAS public service announcements.

Subpart D - Emergency Operations

11.51 EAS code and Attention Signal Transmission requirements.
11.52 EAS code and Attention Signal Monitoring requirements.
11.53 Dissemination of Emergency Action Notification.
11.54 EAS operation during a National Level emergency.
11.55 EAS operation during a State or Local Area emergency.

Subpart E - Tests

11.61 Tests of EAS procedures.
11.62 Closed Circuit Tests of National Level EAS facilities.

Authority: 47 U.S.C. 151, 154(i) and (o), 303(r), 544(g) and 606.

Subpart A - General

§ 11.1 Purpose.

This part contains rules and regulations providing for an Emergency Alert System (EAS). The EAS provides the President with the capability to provide immediate communications and information to the general public at the National, State and Local Area levels during periods of national emergency. The rules in this part describe the required technical standards and operational procedures of the EAS for AM, FM and TV broadcast stations, cable systems and other participating entities. The EAS may be used to provide the heads of State and local government, or their designated representatives, with a means of emergency communication with the public in their State or Local Area.

§ 11.11 The Emergency Alert System (EAS).

(a) The EAS is composed of broadcast networks; cable networks and program suppliers; AM, FM and TV broadcast stations;

Low Power TV (LPTV) stations; cable systems; and other entities and industries operating on an organized basis during emergencies at the National, State, or local levels. It requires that at a minimum all participants use a common EAS protocol, as defined in § 11.31, to send and receive emergency alerts in accordance with the effective dates in the following tables:

TIMETABLE

BROADCAST STATIONS

Requirement	Until 7/1/95	7/1/95	7/1/96	7/1/97
Two-tone encoder timing	20-25 seconds	8-25 seconds	8-25 seconds	8-25 seconds [1]
Two-tone decoder timing	8-16 seconds required. 3-4 seconds optional.	All decoders at 3-4 seconds.	3-4 seconds	Two-tone decoder no longer used.
Digital decoder and encoder	Use is optional	Use is optional	Use is required	Use is required

CABLE SYSTEMS

Requirement	Until 7/1/97	7/1/97 [2]
Two-tone signal from storage device [1]	Use is optional, 8-25 seconds	Use is required, 8-25 seconds
Digital decoder and encoder	Use is optional	Use is required [2]

1/ Two-tone signal used only to provide audio alert to audience before EAS emergency messages and required monthly test.

2/ On this date, subject cable systems shall provide: (1) a video message on all channels or other alerting techniques to hearing impaired and deaf subscribers, (2) an audio message and video interruption on all channels, and (3) a video message on at least one channel to all subscribers.

NOTE: Class D FM and low power TV stations are not required to have two-tone or digital encoders. LPTV stations that operate as television broadcast translator stations are exempt from the requirement to have EAS equipment.

EAS TIMETABLE AND REQUIREMENTS

BROADCAST STATIONS

Requirement	AM	FM	FM Class D	TV	LPTV [1/]
Two-tone decoder (until 7/1/97)	Y	Y	Y	Y	Y
Two-tone encoder	Y	Y	N	Y	N
Digital decoder (7/1/96)	Y	Y	Y	Y	Y
Digital encoder (7/1/96)	Y	Y	N	Y	N
Audio message(7/1/96)	Y	Y	Y	Y	Y
Video message(7/1/96)				Y	Y

CABLE SYSTEMS

Requirement	
Two-tone decoder	N
Two-tone encoder	N
Digital decoder (7/1/97)	Y
Digital encoder (7/1/97)	Y
Audio message on all channels (7/1/97)	Y [2/]
Video interruption on all channels, video message on one channel (7/1/97)	Y [3/]

1/ LPTV stations that operate as television broadcast translator stations are exempt from the requirement to have EAS equipment.
2/ Shall transmit two-tone signal, but it may be from a storage device.
3/ Shall provide video on all channels or other alerting techniques to certified hearing impaired and deaf subscribers.

(b) Class D non-commercial educational FM stations as defined in § 73.506 and LPTV stations as defined in § 74.701(f) are not required to comply with § 11.32. LPTV stations that operate as television broadcast translator stations, as defined in § 74.701(b) are not required to comply with the requirements of this part.

(c) Organizations using other communications systems or technologies such as, Direct Broadcast Satellite (DBS), low earth orbit satellite systems, paging, computer networks, etc. may join the EAS on a voluntary basis by contacting the FCC. Organizations that choose to voluntarily participate must comply with the requirements of this part.

§ 11.12 Two-tone Attention Signal Encoder and Decoder.

Existing two-tone Attention Signal Encoder and Decoder equipment type accepted for use as Emergency Broadcast System equipment under Part 73 may be used by broadcast stations until July 1, 1997, provided that such equipment meets the requirements of § 11.32(a)(9) and 11.33(b). Effective July 1, 1997, the two-tone Attention Signal Decoder will no longer be required and the two-tone Attention Signal will be used to provide an audio alert.

§ 11.13 Emergency Action Notification (EAN) and Emergency Action Termination (EAT).

(a) The Emergency Action Notification (EAN) is the notice to all broadcast stations, subject cable systems, other regulated services of the FCC, participating industry entities, and to the general public that the EAS has been activated for a national emergency.

(b) The Emergency Action Termination (EAT) is the notice to all broadcast stations, subject cable systems, other regulated services of the FCC, participating industry entities, and to the general public that the EAN has terminated.

§ 11.14 EAN Network and Primary Entry Point (PEP) System.

(a) The EAN network is a dedicated communications service connecting industry networks, wire services and common carriers with government activation points. It is used to distribute EAN and EAT messages. The industry control locations retransmit the EAN message, the Presidential message, and the EAT message on their facilities to their affiliates.

(b) The PEP system is a nationwide network of broadcast stations connected with government activation points. It can also be used to distribute EAN and EAT.

§ 11.15 EAS Operating Handbook.

The EAS Operating Handbook states in summary form the actions to be taken by personnel at broadcast stations, and other participating entities upon receipt of an EAN, subject cable systems and other participating entities upon receipt of an EAN,

an EAT, tests, or State and Local Area alerts. It is issued by the FCC and contains instructions for the above situations, monitoring guidelines, and EAS message examples. A copy of the Handbook must be located at normal duty positions or EAS equipment locations when an operator is required to be on duty and be immediately available to staff responsible for authenticating messages and initiating actions.

§ 11.16 National Control Point Procedures.

(a) The National Control Point Procedures are written instructions issued by the FCC to national level EAS control points. They are for use by the participating radio and television networks, cable networks and program suppliers, common carriers and wire services. The procedures are divided into sections as follows:

(1) *National Level EAS Activation.* This section contains the activation and termination instructions for Presidential messages.

(2) *EAS Test Transmissions.* This section contains the instructions for testing the EAS at the National level.

(3) *National Information Center (NIC).* This section contains instructions for distributing United States Government official information messages after completion of the National Level EAS activation and termination actions.

§ 11.17 Authenticator Word Lists.

There are three lists issued by the FCC annually. The lists are to be used by EAS participants to ensure that the National level alerts and tests are legitimate. The lists must be used in accordance with directions in the EAS Operating Handbook and the National Control Point Procedures. LPTV stations do not receive authenticator lists.

(a) *Red Envelope Authenticator List.* This list is used for authentication purposes in accordance with instructions in the EAS Operating Handbook and National Control Point Procedures. It is issued to all broadcast stations and specified control points of the radio and television networks, cable networks and program suppliers, common carriers, wire services and other specified entities. A current copy of this list must be located in the pocket on the inside front cover of the EAS Operating Handbook. This list should be opened only to authenticate receipt of an EAN message and an EAT message from the above control points. The FCC may request immediate return of the Red Envelope at any time.

(b) *White Envelope Authenticator List.* This list is used for caller identification purposes in accordance with instructions in the National Control Point Procedures. It is issued only to specified control points.

(c) *NIC Authenticator List.* This booklet is used for authentication purposes in accordance with instructions in the National Control Point Procedures. It is issued only to participating control points.

§ 11.18 EAS Designations.

(a) National Primary (NP) is a source of EAS Presidential messages.

(b) Local Primary (LP) is a source of EAS Local Area messages. An LP source is responsible for coordinating the carriage of common emergency messages from sources such as the National Weather Service or local emergency management offices as specified in its EAS Local Area Plan. If it is unable to carry out this function, other LP sources in the Local Area may be assigned the responsibility as indicated in State and Local Area Plans. LP sources are assigned numbers (LP-1, 2, 3, etc.) in the sequence they are to be monitored by other broadcast stations in the Local Area.

(c) State Primary (SP) is a source of EAS State messages. These messages can originate from the Governor or a designated representative in the State Emergency Operating Center (EOC) or State Capital. Messages are sent via the State Relay Network.

(d) State Relay (SR) is a relay source of EAS State messages. It is part of the State Relay Network and relays National and State common emergency messages into Local Areas.

(e) Participating National (PN) sources transmit EAS National, State or Local Area messages. The EAS transmissions of PN sources are intended for direct public reception.

(f) Non-participating National (NN) sources have elected not to participate in the National level EAS and hold an authorization letter to that effect. Upon activation of the national level EAS, NN sources are required to broadcast the EAS codes, Attention Signal, the sign-off announcement in the EAS Operating Handbook and then stop operating. All NN sources are required to comply with § 11.51, § 11.52 and § 11.61 of this part. They may transmit EAS State or Local Area messages at any time without prior notice.

§ 11.19 EAS Non-participating National Authorization Letter.

This authorization letter is issued by the FCC to broadcast station licensees. It states that the licensee has agreed to go off the air during a national level EAS message. This authorization will remain in effect through the period of the initial license and subsequent renewals from the time of issuance unless returned by the holder or suspended, modified or withdrawn by the Commission.

§ 11.20 State Relay Network.

This network is composed of State Relay (SR) sources, leased common carrier communications facilities or any other available communication facilities. The network distributes State EAS messages originated by the Governor or designated official. In addition to EAS monitoring, satellites, microwave, FM subcarrier or any other communications technology may be used to distribute State emergency messages.

§ 11.21 State and Local Area Plans and FCC Mapbook.

EAS plans contain guidance for broadcast personnel, emergency officials and NWS personnel to activate the EAS. The plans include the EAS header codes and messages that will be transmitted by key EAS sources (NP, LP, SP and SR).

(a) The State plan contains procedures for State emergency management and other State officials, the NWS, broadcast personnel to transmit emergency information to the public during a State emergency using the EAS.

(b) The Local Area plan contains procedures for local officials or the NWS to transmit emergency information to the public during a local emergency using the EAS. Local plans may be a part of the State plan. A Local Area is a geographical area of contiguous communities or counties that may include more than one state.

(c) The FCC Mapbook is based on the above plans. It organizes all broadcast stations and cable systems according to their State, EAS Local Area and EAS designation.

Subpart B - Equipment Requirements

§ 11.31 EAS protocol.

(a) The EAS uses a four part message for an emergency activation of the EAS. The four parts are: Preamble and EAS Header Codes; audio Attention Signal; message; and, Preamble and EAS End Of Message (EOM) Codes.

(1) The Preamble and EAS Codes must use Audio Frequency Shift Keying at a rate of 520.83 bits per second to transmit the codes. Mark frequency is 2083.3 Hz and space frequency is 1562.5 Hz. Mark and space time must be 1.92 milliseconds. Characters are ASCII seven bit characters as defined in ANSI X3.4-1977.

(2) The Attention Signal must be made up of the fundamental frequencies of 853 and 960 Hz. The two tones must be transmitted simultaneously. The Attention Signal must be transmitted after the EAS header codes.

(3) The message may be audio, video or text.

(b) The ASCII dash and plus symbols are required and may not be used for any other purpose. Unused characters must be ASCII space characters. FM or TV call signs must use a backslash ASCII character (/) in lieu of a dash.

(c) The EAS protocol, including any codes, must not be amended, extended or abridged without FCC authorization. The EAS protocol and message format are specified in the following representation. Examples are also provided in the EAS Operating Handbook.

[PREAMBLE]ZCZC-ORG-EEE-PSSCCC+TTTT-JJJHHMM-LLLLLLLL-
(one second pause)
[PREAMBLE]ZCZC-ORG-EEE-PSSCCC+TTTT-JJJHHMM-LLLLLLLL-
(one second pause)
[PREAMBLE]ZCZC-ORG-EEE-PSSCCC+TTTT-JJJHHMM-LLLLLLLL-
(at least a one second pause)
(transmission of 8 to 25 seconds of Attention Signal)
(transmission of audio, video or text messages)
(at least a one second pause)
[PREAMBLE]NNNN
(one second pause)
[PREAMBLE]NNNN
(one second pause)
[PREAMBLE]NNNN
(at least one second pause)

[PREAMBLE] This is a consecutive string of bits (sixteen bytes of AB hexadecimal[8 bit byte 10101011]) sent to clear the system, set AGC and set asynchronous decoder clocking cycles. The preamble must be transmitted before each header and End Of Message code.

ZCZC- This is the identifier, sent as ASCII characters ZCZC to indicate the start of ASCII code.

ORG- This is the Originator code and indicates who originally initiated the activation of the EAS. These codes are specified in paragraph (d) of this section.

EEE- This is the Event code and indicates the nature of the EAS activation. The codes are specified in paragraph (e) of this section. The Event codes must be compatible with the codes used by the NWS Weather Radio Specific Area Message Encoder (WRSAME).

PSSCCC- This is the Location code and indicates the geographic area affected by the EAS alert. There may be 31 Location codes in an EAS alert. The Location code uses the Federal Information Processing System (FIPS) numbers as described by the U.S. Department of Commerce in National Institute of Standards and Technology publication 772. Each state is assigned an SS number as specified in paragraph (f) of this section. Each county is assigned a CCC number. A CCC number of 000 refers to an entire State or Territory. P defines county subdivisions as follows: 0 = all or an unspecified portion of a county, 1 = Northwest, 2 = North Central, 3 = Northeast, 4 = West Central, 5 = Central, 6 = East Central, 7 = Southwest, 8 = South Central, 9 = Southeast. Other numbers may be designated later for special applications. The use of county subdivisions will probably be rare and generally for oddly shaped or unusually large counties. Any subdivisions must be defined and agreed to by the local officials prior to use.

+TTTT- This indicates the valid time period of a message in 15 minute segments up to one hour and then in 30 minute segments beyond one hour; i.e., +0015, +0030, +0045, +0100, +0430 and +0600.

JJJHHMM- This is the day in Julian Calendar days (JJJ) of the year and the time in hours and minutes (HHMM) when the message was initially released by the originator using 24 hour Universal Coordinated Time (UTC). These codes must remain unchanged for retransmitted messsages.

LLLLLLLL- This is the call sign or other identification of the broadcast station, or NWS office transmitting or retransmitting the message. These codes will be automatically affixed to all outgoing messages by the EAS encoder.

NNNN This is the End of Message (EOM) code sent as a string of four ASCII N characters.

(d) The only originator codes are:

Originator	ORG Code
Emergency Action Notification Network	EAN
Primary Entry Point System	PEP
National Weather Service	WXR
Civil authorities	CIV
Broadcast station or cable system	EAS

(e) The following Event (EEE) codes are presently authorized:

Nature of Activation	EVENT CODES
Emergency Action Notification (National only)	EAN
Emergency Action Termination (National only)	EAT
National Information Center	NIC
National Periodic Test	NPT
Required Monthly Test	RMT
Required Weekly Test	RWT
Tornado Watch	TOA
Tornado Warning	TOR
Severe Thunderstorm Watch	SVA
Severe Thunderstorm Warning	SVR
Severe Weather Statement	SVS
Special Weather Statement	SPS
Flash Flood Watch	FFA
Flash Flood Warning	FFW
Flash Flood Statement	FFS
Flood Watch	FLA
Flood Warning	FLW
Flood Statement	FLS
Winter Storm Watch	WSA
Winter Storm Warning	WSW
Blizzard Warning	BZW
High Wind Watch	HWA
High Wind Warning	HWW
Hurricane Watch	HUA
Hurricane Warning	HUW
Hurricane Statement	HLS
Tsunami Watch	TSA
Tsunami Warning	TSW
Evacuation Immediate	EVI
Civil Emergency Message	CEM
Practice/Demo Warning	DMO
Administrative Message	ADR

(f) The State and Territory FIPS number codes (SS) are as follows. County FIPS numbers (CCC) are contained in the State EAS Mapbook.

State	FIPS#	State	FIPS#	State	FIPS#	State	FIPS#	State	FIPS#
AL	01	HI	15	MA	25	NM	35	SD	46
AK	02	ID	16	MI	26	NY	36	TN	47
AZ	04	IL	17	MN	27	NC	37	TX	48
AR	05	IN	18	MS	28	ND	38	UT	49
CA	06	IA	19	MO	29	OH	39	VT	50
CO	08	KS	20	MT	30	OK	40	VA	51
CT	09	KY	21	NE	31	OR	41	WA	53
DE	10	LA	22	NV	32	PA	42	WV	54
FL	12	ME	23	NH	33	RI	44	WI	55
GA	13	MD	24	NJ	34	SC	45	WY	56

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Terr.	FIPS#	Terr.	FIPS#	Terr.	FIPS#	Terr.	FIPS#	Terr.	FIPS#
AS	60	FM	64	GU	66	MH	68	MP	69
PR	72	PW	70	UM	74	VI	78		

§ 11.32 EAS Encoders.

(a) EAS Encoders must at a minimum be capable of encoding the EAS protocol described in § 11.31 and providing the EAS code transmission requirements described in § 11.51. EAS encoders must additionally provide the following minimum specifications:

(1) Encoder programming. Access to encoder programming shall be protected by a lock or other security measures and be configured so that authorized personnel can readily select and program the EAS Encoder with Originator, Event and Location codes for either manual or automatic operation.

(2) Inputs. The encoder shall have two inputs, one for audio messages and one for data messages (RS-232C with standard protocol and 1200 baud rate).

(3) Outputs. The encoder shall have two outputs, one audio port and one data port (RS-232C with standard protocol and 1200 baud rate).

(4) Calibration. EAS Encoders must provide a means to comply with the modulation levels required in § 11.51(f).

(5) Day-Hour-Minute and Identification Stamps. The encoder shall affix the JJJHHMM and LLLLLLLL codes automatically to all initial messages.

(6) Program Data Retention. Program data and codes shall be retained even with the power removed.

(7) Indicator. An aural or visible means that is activated when the Preamble is sent and deactivated at the End of Message code.

(8) Spurious Response. All frequency components outside 200 to 4000 Hz shall be attenuated by 40 dB or more with respect to the output levels of the mark or space frequencies.

(9) Attention Signal generator. The encoder must provide an attention signal that complies with the following:

(i) Tone Frequencies. The audio tones shall have fundamental frequencies of 853 and 960 Hz and not vary over ± 0.5 Hz.

(ii) Harmonic Distortion. The total harmonic distortion of each of the audio tones may not exceed 5% at the encoder output terminals.

(iii) Minimum Level of Output. The encoder shall have an output level capability of at least +8 dBm into a 600 Ohm load impedance at each audio tone. A means shall be provided to permit individual activation of the two tones for calibration of associated systems.

(iv) Time Period for Transmission of Tones. The encoder shall have timing circuitry that automatically generates the two tones simultaneously for a time period of not less than 8 nor longer than 25 seconds. NOTE: Prior to July 1, 1995, the Attention Signal must be at least 20 and not more than 25 seconds.

(v) Inadvertent activation. The switch used for initiating

the automatic generation of the simultaneous tones shall be protected to prevent accidental operation.

(vi) Indicator Display. The encoder shall be provided with a visual and/or aural indicator which clearly shows that the Attention Signal is activated.

(b) Operating Temperature and Humidity. Encoders shall have the ability to operate with the above specifications within an ambient temperature range of 0 to +50 degrees C and a range of relative humidity of up to 95%.

(c) Primary Supply Voltage Variation. Encoders shall be capable of complying with the requirements of this section during a variation in primary supply voltage of 85 percent to 115 percent of its rated value.

(d) Testing Encoder Units. Encoders not covered by § 11.34(e) of this part shall be tested in a 10 V/m minimum RF field at an AM broadcast frequency and a 0.5 V/m minimum RF field at an FM or TV broadcast frequency to simulate actual working conditions.

§ 11.33 EAS Decoder.

(a) An EAS Decoder must at a minimum be capable of decoding the EAS protocol described in § 11.31, provide the EAS monitoring functions described in § 11.52, and the following minimum specifications:

(1) Inputs. Decoders must have the capability to receive at least 2 audio inputs from EAS monitoring assignments, and one data input (RS-232C with standard protocol and 1200 baud rate). The data input may be used to monitor other communications modes such as Radio Broadcast Data System (RBDS), NWR, satellite, public switched telephone network, or any other source that uses the EAS protocol.

(2) Valid codes. There must be a means to determine if valid EAS header codes are received and to determine if preselected header codes are received.

(3) Storage. Decoders must provide the means to:

(i) Record and store at least two minutes of audio or text messages.

(ii) Store at least 10 preselected header codes for comparison with incoming header codes. A non-preselected header code that is manually transmitted must be stored for comparison with later incoming header codes. The header codes of the last ten received valid messages which still have valid time periods must be stored for comparison with the incoming valid header codes of later messages. The header codes will be deleted from storage as their valid time periods expire.

(4) Display. A visual message shall be developed from any valid EAS header codes received. The message will include the Originator, Event, Location, the valid time period of the message and the local time the message was transmitted. The message shall be in the primary language of the broadcast station or cable system and be fully displayed on the decoder and readable in normal light and darkness.

(5) Indicators. EAS Decoders must have a distinct aural or visible means to show that it is activated when:

(i) any valid EAS header codes are received as specified in § 11.33(a)(10).

(ii) preprogrammed header codes, such as those selected in accordance with § 11.52(d) are received

(iii) a signal is present at each audio input that is specified in § 11.33(a)(1).

(6) Program Data Retention. The program data must be retained even with power removed.

(7) Outputs. Decoders shall have the following outputs: a data port or ports (RS-232C with standard protocol and 1200 baud rate) where received valid EAS header codes and received preselected header codes are available; one audio port that is capable of monitoring each decoder audio input; and, an internal speaker to enable personnel to hear audio from each input.

(8) Decoder Programming. Access to decoder programming shall be protected by a lock or other security measures and be configured so that authorized personnel can readily select and program the EAS Decoder with preselected Originator, Event and Location codes for either manual or automatic operation.

(9) Reset. There shall be a method to automatically or manually reset the decoder to the normal monitoring condition. If an end of message code (EOM) is not received for an EAS message, operators shall be able to select an automatic reset time which may not be less than two minutes. Messages received with the EAN Event codes shall disable the reset function so that lengthy audio messages can be handled. The last message received with valid header codes shall be displayed as required by § 11.33(a)(4) of this section before the decoder is reset.

(10) Message Validity. An EAS Decoder must provide error detection and validation of the header codes of each message to ascertain if the message is valid. Header code comparisons may be accomplished through the use of a bit-by-bit compare or any other error detection and validation protocol. A header code must only be considered valid when two of the three headers match exactly. Duplicate messages must not be relayed automatically.

(11) A header code with the EAN Event code specified in § 11.31(c) of this part that is received through either of the two audio inputs must override all other EAS messages.

(b) Attention Signal. EAS Decoders at broadcast stations shall have detection and activation circuitry that will demute a receiver upon detection of the two audio tones of 853 Hz and 960 Hz. To prevent false responses, decoders designed to use the two tones for broadcast receiver demuting shall comply with the following:

(1) Time Delay. A minimum time delay of 8 but not more than 16 seconds of tone reception shall be incorporated into the demuting or activation process to insure that the tones will be audible for a period of at least 4 seconds. After July 1, 1995, the time delay shall be 3-4 seconds.

(2) Operation Bandwidth. The decoder circuitry shall not respond to tones which vary more than ± 0.5 Hz from each of the frequencies, 853 Hz and 960 Hz.

(3) Reset Ability. The decoder shall have a means to manually or automatically reset the associated broadcast receiver to a muted state.

(b) Decoders shall be capable of operation within the tolerances specified in this section as well as those in §§ 11.32(b), (c) and (d).

§ 11.34 Acceptability of the equipment.

(a) An EAS Encoder used for generating the EAS codes and the Attention Signal must be Certified in accordance with the procedures in Part 2, Subpart J, of this chapter. The data and information submitted must show the capability of the equipment to meet the requirements of this Part as well as the requirements contained in Part 15 of this chapter for digital devices.

(b) Decoders used for the detection of the EAS codes and receiving the Attention Signal must be Certified in accordance with the procedures in Part 2, Subpart J, of this chapter. The data and information submitted must show the capability of the equipment to meet the requirements of this Part as well as the requirements contained in Part 15 of this chapter for digital devices.

(c) The functions of the EAS decoder, Attention Signal generator and receiver, and the EAS Encoder specified in §§ 11.31, 11.32 and 11.33 may be combined and notified as a single unit provided that the unit complies with all specifications in this rule section.

(d) Manufacturers must include instructions and information on how to install, operate and program an EAS Encoder, EAS Decoder, or combined unit and a list of all State and county FIPS numbers with each unit sold or marketed in the U.S.

(e) Waiver requests of the Certification requirements for EAS Encoders or EAS Decoders which are constructed for use at a broadcast station or subject cable system, but are not offered for sale will be considered on an individual basis in accordance with Part 1, Subpart G, of this chapter.

§ 11.35 Equipment operational readiness.

(a) Broadcast stations and subject cable systems are responsible for ensuring that EAS Encoders, EAS Decoders and Attention Signal generating and receiving equipment used as part of the EAS is installed so that the monitoring and transmitting functions are available during the times the broadcast station or cable system is in operation. Additionally, broadcast stations and subject cable systems must determine the cause of any failure to receive the required tests or activations specified in §§ 11.61(a)(1) and (2). Appropriate entries must be made in the broadcast station log as specified in § 73.1820 and § 73.1840 of this chapter, cable system record in § 76.305 of this chapter indicating reasons why any tests were not received.

(b) If the EAS Encoder or EAS Decoder becomes defective the broadcast station or subject cable system may operate without the defective equipment pending its repair or replacement for a period not in excess of 60 days without further FCC authority. Entries shall be made in the broadcast station log or subject cable system records showing the date and time the equipment was removed and restored to service. For personnel training

purposes, the required monthly test script must still be transmitted even though the equipment for generating the EAS message codes, Attention Signal and EOM code is not functioning.

(c) An informal request may be made to the Engineer-in-charge of the FCC field office serving area in which the broadcast station or subject cable system is located for additional time to complete repairs to the defective equipment. These requests must explain what steps have been taken to repair or replace the defective equipment, the alternative procedures being used while the defective equipment is out of service, and when the defective equipment will be repaired or replaced.

Subpart C - Organization

§ 11.41 Participation in EAS.

(a) All broadcast stations and cable systems specified in § 11.11 are categorized as Participating National (PN) sources unless authorized by the FCC to be Non-Participating National (NN) sources.

(b) A broadcast station or cable system may submit a written request to the FCC asking to be a Non-Participating National (NN) source. The FCC may then issue a Non-participating National Authorization letter. NN sources must go off the air during a national EAS activation.

(1) Any existing station that is a Non-participating National (NN) source under § 11.18(f) of this part that wants to become a Participating National (PN) source in the national level EAS must submit a written request to the FCC.

(2) NN sources may voluntarily participate in the State and Local Area EAS. Participation is at the discretion of broadcast station and cable system management and will be in accordance with the provisions of State and Local Area EAS Plans.

(c) All sources, including NN, must have immediate access to an EAS Operating Handbook and a Red Envelope Authenticator List and be placed on the EAS mailing list maintained by the FCC.

§ 11.42 Participation by communications common carriers.

(a) During activation of the National level EAS, communications common carriers which have facilities available in place may, without charge, connect:

(1) an originating source from the nearest service area to a selected Test Center and then to the radio and television broadcast networks, and cable networks and program suppliers for the duration of the emergency, provided an Emergency Action Notification is issued by the White House and the originating source has a local channel from the originating point to the nearest service area.

(2) An independent broadcast station to the radio and television broadcast networks, and cable networks and program suppliers provided the station has in service a local channel from the station's studio or transmitter directly to the

broadcast source.

(b) Upon receipt of the Emergency Action Termination, the common carriers shall disconnect the originating source and the participating independent stations and restore the networks and program suppliers to their original configurations.

(c) During a National level EAS Closed Circuit Test, common carriers which have facilities in place may, without charge, connect an originating source from the nearest service area to a selected Test Center and then to the radio networks and, if participating, any television networks and cable networks and program suppliers. Independent stations will not be connected during the test unless authorized by the FCC. Upon test termination, participants shall be restored to their original configurations.

(d) A common carrier rendering free service shall file with the FCC, on or before July 31st and January 31st of each year, reports covering the six months ending on June 30th and December 31st respectively. These reports shall state what free service was rendered under this rule and the charges in dollars which would have accrued to the carrier for this service if charges had been collected at the published tariff rates if such carriers are required to file tariffs.

§ 11.43 National level participation.

The industry entities voluntarily participating in the national level EAS are:

(a) Radio Networks.
(1) ABC.
(2) Associated Press (APR).
(3) CBS.
(4) CNN.
(5) Jones Satellite Audio.
(6) Moody Broadcasting Network.
(7) Mutual Broadcasting System (MBS).
(8) MUZAK.
(9) NBC.
(10) National Public (NPR).
(11) Unistar.
(12) United Press International (UPIR).
(13) USA.

(b) Television Networks.
(1) ABC.
(2) CBS.
(3) FOX.
(4) NBC.
(5) PBS.

(c) Cable Program Suppliers.
(1) Cable News Network (CNN) and CNN Headline News.
(2) Cinemax.
(3) Disney Channel.
(4) Entertainment and Sports Programming Network (ESPN).
(5) Home Box Office (HBO).
(6) Movie Channel.
(7) MTV.

(8) The Nashville Network.
(9) Nickelodeon.
(10) Showtime.
(11) VH-1.
(12) Weather Channel.
(d) Wire Services.
(1) Associated Press (AP).
(2) Reuters.
(3) United Press International (UPI).
(d) Common Carriers.
(1) American Telephone and Telegraph (AT&T).
(e) Entities that wish to voluntarily participate in the national level EAS may submit a written request to the FCC.

§ 11.44 EAS message priorities.

(a) A national activation of the EAS for a Presidential message with the Event code EAN as specified in § 11.31 must take priority over any other message and preempt it if it is in progress.

(b) EAS participants should transmit other EAS messages in the following order: first, Local Area Messages; second, State Messages; and third, National Information Center (NIC) Messages.

(c) Key EAS sources (NP, LP, SP and SR) and Participating National (PN) sources that remain on the air during a National emergency must carry Presidential Messages "live" at the time of transmission or immediately upon receipt. Activation of the National level EAS must preempt State and Local Area EAS operation.

(c) During a national emergency, the radio and television broadcast network program distribution facilities must be reserved exclusively for distribution of Presidential Messages. NIC messages received from national networks which are not broadcast at the time of original transmission must be recorded locally by LP sources for transmission at the earliest opportunity consistent with the message priorities in paragraph (b) of this section.

§ 11.45 Prohibition of false or deceptive EAS transmissions.

No person may transmit or cause to transmit the EAS codes or Attention Signal, or a recording or simulation thereof, in any circumstance other than in an actual National, State or Local Area emergency or authorized test of the EAS. Broadcast station licensees should also refer to § 73.1217 of this chapter.

§ 11.46 EAS public service announcements.

Broadcast stations may use Public Service Announcements or obtain commercial sponsors for announcements, informercials, or programs explaining the EAS to the public. Such announcements and programs may not be a part of alerts or tests, and may not simulate or attempt to copy alert tones or codes.

§ 11.51 EAS code and Attention Signal Transmission requirements.

(a) Broadcast stations must transmit, either automatically or manually, national level EAS messages and required tests by sending the EAS header codes, Attention Signal, emergency message and End of Message (EOM) using the EAS Protocol. The Attention Signal must precede any emergency audio message. After July 1, 1997, the shortened Attention Signal may only be used as an audio alert signal and the EAS codes will become the minimum signalling requirement for National level messages and tests.

(b) Broadcast stations may transmit only the EAS header codes and the EOM code without the Attention Signal and emergency message for State and local emergencies. Television stations and cable systems should ensure that pauses in video programming before EAS message transmission do not cause television receivers to mute EAS audio messages.

(c) Effective July 1, 1996, all radio and television stations shall transmit EAS messages in the main audio channel.

(1) By the above date, television stations shall transmit a visual message containing the Originator, Event, Location and the valid time period of an EAS message. If the message is a video crawl, it shall be displayed at the top of the television screen or where it will not interfere with other visual messages.

(d) Class D non-commercial educational FM stations as defined in § 73.506 of this chapter and low power TV stations as defined in § 74.701(f) of this chapter are not required to have equipment capable of generating the EAS codes and Attention Signal specified in § 11.31 of this part.

(e) Broadcast stations may additionally transmit EAS messages through other communications means other than the main audio channel. For example, FM stations may transmit the EAS codes on subcarriers including 57 kHz using the RBDS standard produced by the National Radio Systems Committee (NRSC) and television stations may use subsidiary communications services.

(f) Broadcast stations are responsible for ensuring that the equipment for generating the EAS codes and the Attention Signal shall modulate a broadcast station transmitter so that the signal broadcast to other broadcast stations and cable systems alerts them that the EAS is being activated or tested at the National, State or Local Area level. The minimum level of modulation for EAS codes, measured at peak modulation levels using the internal calibration output specified in § 11.32(a)(4) of this part, shall modulate the transmitter at no less than 80% of full channel modulation limits. Measured at peak modulation levels, each of the Attention Signal tones shall be calibrated separately to modulate the transmitter at no less than 40%. These two calibrated modulation levels shall have values that are within 1 dB of each other.

(g) Effective July 1, 1997, cable systems shall transmit EAS audio messages in the same order specified in paragraph (a) of this section. The Attention Signal may be produced from a storage device. Additionally, subject cable systems must:

(1) install, operate, and maintain equipment capable of generating the EAS codes. The modulation levels for the EAS codes and Attention Signal for cable systems shall comply with the aural signal requirements in § 76.605 of this chapter. This will provide sufficient signal levels to operate cable subscriber television or radio receivers equipped with EAS decoders and to audibly alert subscribers.

(2) provide a video interruption and an audio EAS message on all channels. The audio message must state which channel is carrying the visual EAS message.

(3) Subject cable systems shall transmit a visual EAS message on at least one channel. The message shall contain the Originator, Event, Location and the valid time period of the EAS message. If the visual message is a video crawl, it shall be displayed at the top of the subscriber's television screen or where it will not interfere with other visual messages.

(4) Cable systems shall provide a method to alert hearing impaired or deaf subscribers to EAS messages. Methods may include: a box that displays EAS messages and activates other alerting mechanisms or lights; visual messages on all channels; etc.

(5) Cable systems may elect not to interrupt EAS messages from broadcast stations based on a written agreement between all concerned.

(h) Other technologies and public service providers, such as DBS, low earth orbiting satellites, etc., that wish to participate in the EAS may contact the FCC's EAS office or their State Emergency Communication Committee for information and guidance.

(i) If manual interrupt is used as specified in paragraph (k) of this section, EAS Encoders must be located so that station or cable staff, at normal duty locations, can initiate the EAS code and Attention Signal transmission.

(j) Broadcast stations or cable systems that are co-owned and co-located with a combined studio or control facility, (such as an AM and FM licensed to the same entity and at the same location or a cable headend serving more than one system) may provide the EAS transmitting requirements contained in this section for the combined station or cable system with one EAS Encoder. The requirements of § 11.32 must be met for both the broadcast station and cable system.

(k) Broadcast stations and cable systems are required to transmit all received EAS messages in which the header code contains the Event codes for Emergency Action Notification (EAN), Emergency Action Termination (EAT), and Required Monthly Test (RMT), with the accompanying location codes for their State and State/county. These EAS messages shall be retransmitted unchanged except for the LLLLLLLL- code which identifies the broadcast station or cable system retransmitting the message. See § 11.31(c) of this part. If an EAS source originates any EAS messages with the above Event codes, it must include the location codes for the State and counties in its service area. When transmitting the required weekly test, broadcast stations and subject cable systems will use the event code RWT. The location codes will be the state and county for the broadcast station city

of license or subject cable system community. Other location codes may be included upon approval of station or cable system management approval. EAS code requirements and examples are provided in the EAS Operating Handbook. Operations may be conducted automatically or manually.

(l) Automatic interrupt of programming and transmission of EAS messages is required when facilities are unattended and must include a permanent record that contains at a minimum the following information: Originator, Event, Location and valid time period of the message. The decoder performs the functions necessary to determine which EAS messages are automatically transmitted by the encoder.

(2) Manual interrupt of programming and transmission of EAS messages may be used. EAS messages with the EAN and EAT Event codes must be transmitted immediately and Monthly EAS test messages within 15 minutes. All actions must be logged or recorded.

(l) Broadcast stations and cable systems may employ a minimum delay feature, not to exceed 15 minutes, for automatic interrupt of EAS codes but not for the EAN Event which must be transmitted immediately.

(m) Either manual or automatic operation of EAS equipment may be used at broadcast stations or cable systems that use remote control. If manual operation is used, an EAS decoder must be located at the remote control location and directly monitor the signals of the two assigned EAS sources. If direct monitoring of the assigned EAS sources is not possible at the remote location, automatic operation is required. If automatic operation is used, the remote control location may be used to override the transmission of an EAS message. Broadcast stations and cable systems may change back and forth between automatic and manual operation.

§ 11.52 EAS code and Attention Signal Monitoring requirements.

(a) Before July 1, 1997, broadcast stations must be capable of receiving the Attention Signal required by § 11.32(a)(9) and emergency messages of other broadcast stations during their hours of operation. Effective July 1, 1996, all broadcast stations must install and operate during their hours of operation, equipment capable of receiving and decoding, either automatically or manually, the EAS header codes, emergency messages and EOM code. The effective date for subject cable systems is July 1, 1997. NOTE: after July 1, 1997, the two-tone Attention Signal will not be used to actuate two-tone decoders but will be used as an aural alert signal.

(b) If manual interrupt is used as specified in § 11.51(k)(2) of this part, decoders must be located so that operators at their normal duty stations at broadcast stations and cable systems can be alerted immediately when EAS messages are received.

(c) Broadcast stations or cable systems that are co-owned and co-located with a combined studio or control facility, (such as an AM and FM licensed to the same entity and at the same

location or a cable headend serving more than one system) may provide the EAS monitoring requirements contained in this section for the combined station or cable system with one EAS Decoder. The requirements of § 11.33 must be met for the combined station or cable system.

(d) Broadcast stations and subject cable systems must monitor the two EAS sources assigned in accordance with the monitoring priorities in the EAS Operating Handbook. The off-air monitoring assignments of each broadcast station and cable system are specified in the State EAS Plan and FCC Mapbook.

(1) If the required EAS sources cannot be received, alternate arrangements or a waiver may be obtained by written request to the FCC's EAS office. In an emergency, a waiver may be issued over the telephone with a follow up letter to confirm temporary or permanent reassignment.

(2) Broadcast station and cable system management will determine which header codes will automatically interrupt their programming for State and Local Area emergency situations affecting their audiences.

(e) A broadcast station or cable system is required to interrupt normal programming either automatically or manually when it receives an EAS message in which the header code contains the Event codes for Emergency Action Notification (EAN), Emergency Action Termination (EAT), or Required Monthly Test (RMT) for its State or State/county location.

(1) Automatic interrupt of programming is required when facilities are unattended. Automatic operation must provide a permanent record of the EAS message that contains at a minimum the following information: Originator, Event, Location and valid time period of the message.

(2) Manual interrupt of programming and transmission of EAS messages may be used. EAS messages with the EAN Event code must be transmitted immediately and Monthly EAS test messages within 15 minutes. All actions must be logged or recorded. Decoders must be programmed for the EAN and EAT Event header codes for EAS National level emergencies and the RMT and RWT Event header codes for required monthly and weekly tests, with the appropriate accompanying State and State/county location codes.

§ 11.53 Dissemination of Emergency Action Notification.

Initiation of the EAN by any one of the following sources is sufficient to begin the emergency actions in § 11.54 of this part.

(a) National Level. The EAN is issued by the White House. The EAN message is sent from an origination point to control points of the participating radio and television networks, cable networks and program suppliers, wire services, communications common carriers and other entities. It is then disseminated via:

(1) Radio and television broadcast networks to all affiliates with the use of internal alerting facilities.

(2) Cable networks and program suppliers to cable systems and subscribers.

(3) Wire services to all subscribers (AM, FM, TV, LPTV and other stations).

(4) Off-air monitoring of EAS sources.

(b) State level and Local Area levels. EAN dissemination arrangements at these levels originate from State and local governments in accordance with State and Local Area plans.

(c) Broadcast stations must, prior to commencing routine operation or originating any emissions under program test, equipment test, experimental, or other authorizations, determine whether the EAS has been activated by any of the following methods:

(1) Monitor the radio and TV networks and cable systems.

(2) Check the wire services.

(3) Monitor the assigned EAS sources.

§ 11.54 EAS operation during a National Level emergency.

(a) The EAS Operating Handbook summarizes the procedures to be followed upon receipt of a National level EAN or EAT Message.

(b) Immediately upon receipt of an EAN message, broadcast stations and cable systems must:

(1) Monitor the radio and television networks, cable networks and program suppliers, and wire services for further instructions.

(2) Verify the authenticity of the EAN message with the current ~~Red Envelope Authenticator~~ List (broadcast stations only).

(3) Monitor the two EAS sources assigned in the State or Local Area plan or FCC Mapbook for any further instructions.

(4) Discontinue normal programming and follow the transmission procedures in the appropriate section of the EAS Operating Handbook. Announcements may be made in the same language as the primary language of the station.

(i) Key EAS sources (National Primary (NP), Local Primary (LP), State Primary (SP), State Relay (SR) and Participating National (PN) sources) follow the transmission procedures and make the announcements in the National Level Instructions of the EAS Operating Handbook.

(ii) Non-participating National (NN) sources follow the transmission procedures and make the sign-off announcement in the EAS Operating Handbook's National Level Instructions section for NN sources. After the sign-off announcement, NN sources are required to remove their carriers from the air and monitor for the Emergency Action Termination message. NN sources using automatic interrupt under § 11.51(k)(1) of this part, must transmit the header codes, Attention Signal, sign-off announcement and EOM code after receiving the appropriate EAS header codes for a national emergency.

(5) After completing the above transmission procedures, key EAS and Participating National sources must transmit a common emergency message until receipt of the Emergency Action Termination Message. Message priorities are specified in § 11.44 of this part. If LP or SR sources of a Local Area cannot provide an emergency message feed, any source in the Local Area may elect to provide a message feed. This should be done in an organized manner as designated in State and Local Area EAS Plans.

(6) The Standby Script shall be used until emergency

messages are available. The text of the Standby Script is in the EAS Operating Handbook's section for Participating sources.

(7) TV broadcast stations shall display an appropriate EAS slide and then transmit all EAS announcements visually and aurally as specified in § 73.1250(h) of this chapter.

(8) Announcements may be made in the same language as the primary language of the station.

(9) Broadcast Stations in the International Broadcast Service must cease broadcasting immediately upon receipt of an Emergency Action Notification and must maintain radio silence until an EAT is issued. Such stations may be issued an emergency authorization by the FCC with concurrence of the Director, Office of Science and Technology Policy, to transmit Federal government broadcasts or communications.

(10) Broadcast stations may transmit their call letters and cable systems may transmit the names of the communities they serve during an EAS activation. EAS State and Local Area identifications must be given as provided in State and Local Area EAS plans.

(11) All broadcast stations and cable systems operating and identified with a particular Local Area must transmit a common national emergency message until receipt of the Emergency Action Termination.

(12) Broadcast stations, except those holding an EAS Non-participating National Authorization letter, are exempt from complying with § 73.62 and § 73.1560 of this chapter (operating power maintenance) while operating under this part.

(13) National Primary (NP) sources must operate under the procedures in the National Control Point Procedures.

(14) The time of receipt of the EAN and Emergency Action Termination messages shall be entered in the broadcast station logs (as specified in § 73.1820 and § 73.1840 of this chapter), or the cable system records (as specified in § 76.305 of this chapter).

(c) Upon receipt of an Emergency Action Termination Message, broadcast stations and cable systems must follow the termination procedures in the EAS Operating Handbook.

(d) Broadcast stations and cable systems originating emergency communications under this section shall be considered to have conferred rebroadcast authority, as required by Section 325(a) of the Communications Act of 1934, 47 U.S.C. § 325(a), to other participating broadcast stations and cable systems.

§ 11.55 EAS operation during a State or Local Area emergency.

(a) The EAS may be activated at the State or Local Area levels by broadcast stations and cable systems at their discretion for day-to-day emergency situations posing a threat to life and property. Examples of natural emergencies which may warrant activation are: tornadoes, floods, hurricanes, earthquakes, heavy snows, icing conditions, widespread fires, etc. Man-made emergencies may include: toxic gas leaks or liquid spills, widespread power failures, industrial explosions, and civil disorders.

(b) EAS operations must be conducted as specified in State and Local Area EAS Plans. The plans must list all authorized entities participating in the State or Local Area EAS.

(c) Immediately upon receipt of a State or Local Area EAS message, participating broadcast stations and cable systems must do the following:

(1) State Relay (SR) sources monitor the State Relay Network or follow the State EAS plan for instructions from the State Primary (SP) source.

(2) Local Primary (LP) sources monitor the Local Area SR sources or follow the State EAS plan for instructions.

(3) Participating National (PN) and Non-participating National (NN) sources monitor the Local Area LP sources for instructions.

(4) Broadcast stations and cable systems participating in the State or Local Area EAS must discontinue normal programming and follow the procedures in the State and Local Area Plans. Television stations must comply with § 11.54(b)(7). Broadcast stations providing foreign language programming shall comply with § 11.54(b)(8) of this part.

(5) Upon completion of the State or Local Area EAS transmission procedures, resume normal programming until receipt of the cue from the SR or LP sources in your Local Area. At that time begin transmitting the common emergency message received from the above sources.

(6) Resume normal operations upon conclusion of the message.

(7) The times of the above EAS actions must be entered in the broadcast station or cable system records as specified in § 11.54(b)(15) of this part. FCC Form 201 may be used to report EAS activations.

(8) Use of the EAS codes or Attention Signal automatically grants rebroadcast authority as specified in § 11.54(d) of this part.

Subpart E - Tests

§ 11.61 Tests of EAS procedures.

(a) Tests shall be made at regular intervals as indicated below. Additional tests may be performed anytime. EAS activations and special tests may be performed in lieu of required tests as specified in paragraph (a)(6) of this section. All tests will conform with the procedures in the EAS Operating Handbook.

(1) Required Monthly Tests of the EAS header codes, Attention Signal, Test Script and EOM code.

(i) Effective July 1, 1996, AM, FM and TV stations.

(ii) Effective July 1, 1997, cable systems.

(iii) Tests in odd numbered months shall occur between 8:30 a.m. and local sunset. Tests in even numbered months shall occur between local sunset and 8:30 a.m. They will originate from Local or State Primary sources. Time and script content will be developed by State Emergency Communications Committees in cooperation with affected broadcast stations, cable systems, and other participants. Script content can be in the primary

language of the broadcast station or cable system. These monthly tests must be transmitted within 15 minutes of receipt by broadcast stations and cable systems in an EAS Local Area or State. Class D non-commercial educational FM and LPTV stations need to transmit only the test script.

(2) Required Weekly Tests:

(i) Attention Signal. Until July 1, 1996, broadcast stations must conduct tests of the Attention Signal and Test Script at least once a week at random days and times between 8:30 a.m. and local sunset. Class D non-commercial educational FM and LPTV stations do not need to transmit the Attention Signal. Script content can be in the primary language of the station.

(ii) EAS Header Codes and EOM Codes:

(A) Effective July 1, 1996, AM, FM and TV stations must conduct tests of the EAS header and EOM codes at least once a week at random days and times.

(B) Effective July 1, 1997, subject cable systems must conduct tests of the EAS header and EOM codes at least once a week at random days and times.

(iii) Class D non-commercial educational FM and LPTV stations are not required to transmit this test but must log receipt.

(iv) The EAS weekly test is not required during the week that a monthly test is conducted.

(3) Periodic Wire Service Tests. AP, Reuters and UPI shall separately conduct test transmissions to broadcast stations and cable systems on their wire networks. Tests may occur no more than once a month at random times selected by the wire services. These tests shall conform with the procedures in the EAS Operating Handbook and the National Control Point Procedures.

(4) Weekly Emergency Action Notification (EAN) network transmissions. Tests of the National level interconnection facilities shall be conducted on a random basis once each week. They shall originate from the Federal government over a dedicated network to specified control points of the radio and television networks, cable networks and program suppliers, wire services, common carriers and other organizations. The tests shall conform with the National Control Point Procedures.

(5) Periodic National Tests. National Primary (NP) sources shall participate in tests as appropriate. The FCC may request a report of these tests.

(6) EAS activations and special tests. The EAS may be activated at the State or Local Area level by a broadcast station or cable system in lieu of the monthly or weekly tests required by this section. Such activation must include transmission of the EAS header codes, Attention Signal, emergency message and EOM code for substitution of the monthly test. Activation must include transmission of the Attention Signal and emergency message for substitution of the weekly test in paragraph (2)(i) of this section. Activation must include transmission of the EAS header and EOM codes for substitution of the weekly test in paragraph (2)(ii) of this section. Television stations and cable systems shall comply with the visual message requirements in § 11.51 of this part. Special EAS tests at the State and Local Area levels may be conducted on a day-to-day basis following

procedures in State and Local Area EAS plans.

(b) Entries shall be made in the broadcast station or cable system records as specified in § 11.54(b)(14) of this part concerning EAS tests received and transmitted.

§ 11.62 Closed Circuit Tests of National Level EAS facilities.

(a) Closed Circuit Tests (CCT) of National Level EAS facilities shall be conducted on a random or scheduled basis not more than once a month and not less than once every three months. Test times will be selected by the White House in coordination with participating industry personnel, the Federal Emergency Management Agency (FEMA), and the FCC. The FCC will notify the participating networks, wire services, cable networks and program suppliers and common carriers of the selected time window for the test at least four working days (holidays excluded) before the test.

(b) The EAS Operating Handbook and National Control Point Procedures contain the CCT procedures.

(c) The control points of the participating radio and television networks, cable networks and program suppliers, wire services and common carriers will receive notification of a CCT by a "Closed Circuit Test Activation Message".

(d) Test announcements will originate from a point selected by the White House with program feed circuitry connected to the telephone company Toll Test Center at points coordinated for each test. Participating common carriers will connect, as required, the facilities of the radio networks and other test participants. Telephone companies are not authorized to add any participating independent broadcast stations unless authorized by the FCC. Authentication will be provided to the Toll Test Center or other program entry location responsible for test arrangements. Authentication used in the CCT Message will be the test words on the outside of the Red Envelope Authenticator List.

(e) CCT procedures for radio network affiliates, wire service subscribers, and, if participating, television network affiliates and cable systems are as follows:

(1) Notification of a CCT will be disseminated as specified in § 11.53(a)(1) and (a)(3) of this part and the EAS Operating Handbook.

(2) Recipients immediately monitor their radio network, and if participating, their television network or cable system, and check their wire service for the receipt of the CCT Activation Message. Verify authenticity using the current Red Authenticator List.

(3) Continue to monitor for the CCT audio talkup and program.

(4) Enter the time of receipt of the CCT message in the broadcast station log or cable system records.

(5) The CCT terminates on the following aural closing cue in the text of the test program: "This concludes the Closed Circuit Test of the EAS."

(6) Following the closing cue, wire service subscribers will receive a "Closed Circuit Test Termination Message". Record the

time of receipt as indicated above.

(f) The FCC may request a CCT report in a prescribed format.

III. PART 73--RADIO BROADCAST SERVICES

The authority section for Part 73 continues to read as follows:

47 U.S.C. 154, 303, 334.

6. Subpart G of Part 73 is amended by deleting sections 73.901 through 73.962 in Subpart G, revising the title of subpart G, adding a new introductory paragraph following the Subpart G title and adding a cross reference to new Part 11 to read as follows:

Subpart G -- Emergency Broadcast System

The Emergency Broadcast System (EBS) rules have been renamed the Emergency Alert System (EAS) and revised. The new EAS rules are contained in a new Part 11. Equipment type accepted for EBS use under the old Subpart G rules may continue to be used at broadcast stations until July 1, 1996, provide that it meets all applicable requirements of Part 11.

CROSS REFERENCE

§ 73.901 is amended and renumbered § 11.1
§ 73.902 is amended and renumbered § 11.1
§ 73.903 is amended and renumbered § 11.11
§ 73.904 is deleted
§ 73.905 is amended and renumbered § 11.13
§ 73.906 is amended and renumbered § 11.12
§ 73.907 is amended and merged into § 11.13
§ 73.908 is amended and renumbered § 11.15
§ 73.909 is amended and renumbered § 11.16
§ 73.910 is amended and renumbered § 11.17
§ 73.912 is amended and renumbered § 11.43
§ 73.913 is amended and renumbered § 11.18
§ 73.914 is amended and renumbered § 11.19
§ 73.915 is amended and merged into § 11.19
§ 73.916 is amended and merged into § 11.19
§ 73.917 is amended and merged into § 11.19
§ 73.918 is amended and merged into § 11.19
§ 73.919 is amended and renumbered § 11.20
§ 73.920 is amended and merged into § 11.21(b)
§ 73.921 is amended and renumbered § 11.21
§ 73.922 is amended and merged into § 11.44
§ 73.926 is amended and renumbered § 11.41
§ 73.927 is amended and merged into § 11.42
§ 73.931 is amended and divided into § 11.53 and § 11.14
§ 73.932 is amended and divided into § 11.35, § 11.51 and § 11.52
§ 73.933 is amended and renumbered § 11.54
§ 73.935 is amended and renumbered § 11.55

§ 73.936 is amended and merged into § 11.55
§ 73.937 is amended and merged into § 11.55
§ 73.940 is amended and renumbered § 11.32
§ 73.941 is amended and renumbered § 11.33
§ 73.942 is amended and renumbered § 11.34
§ 73.943 is amended and merged into § 11.34
§ 73.961 is amended and renumbered § 11.61
§ 73.962 is amended and renumbered § 11.62
§§ 11.31, 11.45 and 11.46 are added

* * * * *

7. Section 73.1207 is amended by revising paragraph (b)(1) and adding a new paragraph (c)(4) to read as follows:

§ 73.1207 Rebroadcasts.

(a) * * *
(b) * * *
(1) Stations originating emergency communications under a State EAS plan are considered to have conferred rebroadcast authority to other participating stations.
(c) * * *
(4) Emergency communications originated under a State EAS plan.

* * * * *

8. Section 73.1250 is amended by revising paragraph (c) and revising the last sentence of paragraph (h) to read as follows:

§ 73.1250 Broadcasting emergency information.

(a) * * *
(c) If the Emergency Alert System (EAS) is activated for a national emergency while a Local Area or State emergency operation is in progress, the national level EAS operation must take precedence. If, during the broadcasting of Local Area or State emergency information, the EAS codes or Attention Signal described in § 11.12 of this chapter are used, the broadcasts are considered as being carried out under a Local Area or State EAS plan.
(d) * * *
(h) * * * However, when an emergency operation is being conducted under a national, State or Local Area Emergency Alert System (EAS) plan, emergency information shall be transmitted both aurally and visually unless only the EAS codes are transmitted as specified in § 11.51 of this chapter.

* * * * *

9. Section 73.1820 is amended by revising paragraph (a)(1)(C)(iii) to read as follows.

§ 73.1820 Station log.

(a) * * *
(1) * * *
(C) * * *

(iii) An entry of each test and activation of the Emergency Alert System (EAS) pursuant to the requirement of part 11 of this chapter and the EAS Operating Handbook. Stations may keep EAS data in a special EAS log which shall be maintained at a convenient location; however, this log is considered a part of the station log.

* * * * *

10. Section 73.3549 is amended by revising the title and the first sentence to read as follows.

§ 73.3549 Requests for extension of authority to operate without required monitors, indicating instruments, and EAS encoders and decoders.

Requests for extension of authority to operate without required monitors, transmission system indicating instruments, or encoders and decoders for monitoring and generating the EAS codes and Attention Signal should be made to the Engineer in Charge of the Field Office in which the station is operating. * * *

* * * * *

11. Section 73.4097. is amended by revising the title to read as follows:

§ 73.4097 EBS (now EAS) attention signals on automated programming systems.

* * * * *

12. The alphabetical index following Part 73 is amended by replacing the entries for EBS with the following:

ALPHABETICAL INDEX-PART 73

* * * * *

E

* * * * *

EAS (Emergency Alert System).....11.1-11.62
EAS signal tests-automated systems.....73.4097(*)
* * *
Emergency Alert System (EAS).....11.1-11.62

IV. PART 76--CABLE TELEVISION SERVICE

The authority section for Part 76 continues to read:

AUTHORITY: Sec. 2, 3, 4, 301, 303., 307, 308, 309, 48 Stat., as amended, 1064, 1065, 1066, 1081, 1082, 1083, 1084, 1085, 1101; 47 U.S.C. Secs. 152, 153, 154, 301, 303, 307, 308, 309; 532; 533; 535; 542; 543; 552; 554, as amended, 106 Stat. 1460.

13. Section 76.3 is amended by adding a new entry in numeric order to the list of other pertinent rules to read as follows:

§ 76.3 Other pertinent rules.

* * *

Part 11-Emergency Alert System (EAS)

* * *

* * * * *

14. Section 76.5 is amended by adding a new paragraph (qq) to read as follows:

§ 76.5 Definitions.

* * * * *

(qq) Emergency Alert System (EAS). The EAS is composed of broadcast networks; cable networks and program suppliers; AM, FM and TV broadcast stations; Low Power TV (LPTV) stations; subject cable systems; and other entities and industries operating on an organized basis during emergencies at the National, State, or local levels.

* * * * *

15. Section 76.301 is amended by revising the first sentence and adding a third sentence to read as follows:.

§ 76.301 Copies of rules.

The operator of a cable television system shall have a current copy of Part 76 and, if subject to the Emergency Alert System (EAS) rules contained in Part 11, an EAS Operating Handbook, and is expected to be familiar with the rules governing cable television systems and the EAS. * * * Copies of the EAS Operating Handbook may be obtained from the Commission's EAS staff, in Washington, DC.

* * * * *

16. Section 76.305 is amended by adding a new paragraph (a)(1) to read as follows.

§ 76.305 Records to be maintained locally by cable system operators for public inspection.

(a) * * *

(1) A record shall be kept of each test and activation of the Emergency Alert System (EAS) procedures pursuant to the requirement of part 11 of this chapter and the EAS Operating Handbook. These records shall be kept for three years.

APPENDIX F

GLOSSARY OF TERMS

Activation -
the initiation of the EAS by transmission of the EAS codes

ASCII -
a standard set of text characters with numerical equivalents

Attention Signal -
eight seconds of two tones (853 and 960 Hz) used as an audio alert

Audio Frequency Shift Keying (AFSK) -
a digital modulation technique that uses two shifting audio frequencies to transmit binary data

Authenticator Word Lists -
a list of words that federal officials send prior to official EAS national activation; used to substantiate the information being sent

Authorization -
the official authorization, given by FCC, for a broadcast station to go off the air during a national level activation of the EAS

Automatic Interruption -
the automatic encoding and transmission of EAS codes for preselected events

Baud Rate -
the speed of data transmitted, equal to number of elements sent per second (equal to bits per second if a bit is the element)

Bit Rate -
the speed of binary data transmitted, equal to the number of digital bits sent per second

Certification -
an equipment authorization issued by the FCC based on representations and test data submitted by the applicant for equipment designated to be operated without individual license under Parts 15 and 18 of the rules

Class D FM station -
a station whose output power is 10 Watts or less

Closed Circuit Test (CCT) -
a test of the EAN network from FEMA to the EAN program participants, and ending at the facilities of the EAN participants' affiliates

Direct Broadcast Satellite (DBS) -
a service intended to deliver satellite signals directly to consumers using small, relatively inexpensive receive stations

Decoder (EAS) -
an electronic device used by EAS participants to receive EAS alerts and to translate the EAS codes into a visual message

Decoder (Two-Tone) -
an electronic device that alerts operators to the reception of the two-tone signal

EAN network -
the interconnection of the Federal Government with national networks and program suppliers used to disseminate the EAN messages

Emergency Action Notification (EAN) -
the message for national EAS activation

Emergency Action Termination (EAT) -
the message for national EAS termination

Encoder (EAS) -
an electronic device used by EAS participants to originate EAS alerts by creating the EAS codes for transmission to other participants and the public

Encoder (Two-Tone) -
an electronic device that produces the two-tone signal

EOM Code -
in ASCII form 'NNNN', this burst of data, sent three times signifies the end of an EAS message and EAS activation

Event Code -
a three character ASCII code in the EAS headers that denotes the type or cause of emergency event

Federal Emergency Management Agency (FEMA) -
one of the three federal agencies that administer EAS

FIPS Number -
a five character ASCII code in the EAS headers that represent those counties affected by an EAS activation, as defined by the Federal Information Processing System that assigns each state and territory with their respective counties a five digit number

Header Code -
a single string of intelligent digital EAS ASCII data that includes the originator, event, location, time period, and other basic information concerning an emergency; three header codes precede the voice warning message

Julian Calendar -
a method of specifying the date by the number of days which have passed since the first day of January in a year

Key Source -
a source which is central to the dissemination of emergency alerts and information, such as an NP, SP, SR, or LP broadcast station

Local Primary (LP) -
a key source within a local area that is the primary source of EAS programming for that local area

Location Code -
an ASCII code in an EAS header that specifies the location of an emergency utilizing the five character FIPS code of a state and county, and a sixth character to designate nine divisions of a county

Low Power Television (LPTV) -
a television signal translator station which also originates programming

Mapbook -
a list of broadcast and cable systems and their EAS designation delineated by state and local area for use by other stations to determine the best source of EAS monitoring; an FCC generated attachment to every state plan

Mark Frequency -
the audio frequency of AFSK modulation that corresponds to a digital bit of one (1); the mark frequency of EAS codes is 6250/3 Hz, or approximately 2083.33 Hz

Monitoring Assignment -
the off-air broadcast or cable sources of EAS activations and programming as given in the FCC Mapbook and the state plans

National Control Point Procedures -
those national EAS procedures used only by national networks and program suppliers

National Information Center (NIC) -
a source of official federal government information

National Oceanic and Atmospheric Administration (NOAA) -
one of the three federal agencies that participate in EAS

National Periodic Test (NPT) -
tests of National Primary sources

National Primary (NP) -
a primary source of Presidential or other national EAS activations and programming, including broadcast stations involved with the PEP system and EAN Networks

National Weather Service (NWS) -
an operation of NOAA that is directly responsible for issuing local weather-related emergency alerts and warnings in addition to day-to-day forecasts and other weather activities

NOAA Weather Radio (NWR) -
a service of the National Weather Service that provides to a local area continuous broadcasts of the latest weather information and any weather-related emergency warnings using one of seven VHF radio channels

Non-participating National (NN) -
an EAS source (usually a broadcast station) that has elected not to participate in the National-level EAS and removes its carrier from the air if a national-level activation occurs

Operating Handbook -
a document issued by the FCC that instructs broadcast station and cable personnel of the actions they must take during an activation of EAS

Operator Interruption -
the transmission of an EAS activation which has been manually initiated by broadcast station or cable system personnel

Originator Code -
a three character ASCII code in an EAS header which denotes the source of an activation

Participating National (PN) -
broadcast stations, cable systems, or MDS stations which monitor primary sources of EAS programming and directly feed emergency alerts to the public

Preselected code -
an EAS event which the operator of EAS equipment has chosen to be automatically encoded and retransmitted upon reception

Primary Entry Point (PEP) -
key broadcast stations throughout the U.S. which together can provide national emergency information in the event that the primary national alerting methods are inoperable

Protocol -
a standard set of guidelines by which digital information is encoded and decoded, including the common code structure, the character set used, the sequence and timing of codes, and modulation technique used for radio transmission

Program Priorities -
the precedence of the information that must be transmitted during an EAS activation, namely national, local, and state activations in that order

Radio Broadcast Data System (RBDS) -
a defined protocol for data that is transmitted on the 57 kHz subcarrier of FM radio broadcast stations utilized mainly by consumer devices equipped to receive it

Required Monthly Test (RMT) -
a coordinated monthly test of EAS operations involving the full receiving and transmission of EAS codes, Attention Signal, EAS test programming, and EAS EOM codes

Required Weekly Test (RWT) -
an independent weekly test of EAS equipment only involving the decoding and encoding of EAS header codes and EOM codes

RS-232 -
a common interface standard which specifies the mechanical connection, electrical signals, and the function of the signals carried across the interface

Space Frequency -
the audio frequency of AFSK modulation that corresponds to a digital bit of zero (0); the space frequency of EAS codes is 6250/4 Hz, or 1562.5 Hz

State/Local Plan -
a document that details monitoring assignments, actions to be taken in emergency activations, and other guidance for broadcasters and cable personnel in use of the EAS

State Primary (SP) -
a primary source of EAS state programming which can originate with a Governor or designated representative, such as a state's emergency operations officer

State Relay (SR) -
an entity which receives and retransmits EAS activations in a State Relay Network to assist in bringing a state activation to all Local Areas of a state

State Relay Network -
a system of facilities used to distribute State EAS activations and programming across a state

Subcarrier -
an inaudible portion of the broadcast signal that is added to the program signal of the FM or TV sound and these can include the FM 57 kHz, 67 kHz, 69 kHz, and 92 kHz and the TV Subsidiary Communications Services

Subsidiary Communications Services -
a subcarrier of television and FM stations providing a second audio programming source

Type Acceptance -
an equipment authorization issued by the FCC based on test data submitted by the applicant for equipment to be used pursuant to a station authorization

UTC -
Coordinated Universal Time, the world-wide common time standard that is used in EAS headers for time stamp

Valid Code -
an EAS header which has been matched bit-for-bit with one of two other received headers thereby checked for validity

WRSAME -
Weather Radio Specific Area Message Encoder, a device used by National Weather Service to broadcast WRSAME data on the National Weather Radio for day-to-day forecasts and weather-related emergency announcements

APPENDIX G

EAS TIMETABLE

TIMETABLE

BROADCAST STATIONS

Requirement	11/10/94	7/1/95	7/1/96	7/1/97
Two-tone encoder timing	20-25 seconds	8-25 seconds	8-25 seconds	8-25 seconds 1/
Two-tone decoder timing	Begin changing timing from 8-16 to 3-4 sec.	All decoders at 3-4 sec.	3-4 sec.	Two-tone decoders no longer used
EAS decoder and encoder	Use is optional	Use is optional	Use as required	Use as required

CABLE SYSTEMS

Requirement	Before 7/1/97	7/1/97 2/
Two-tone signal from storage device 1/	Use is optional, 8-25 seconds	Use as required, 8-25 seconds
EAS decoder and encoder	Use is optional	Use as required 2/

1/ Two-tone signal used only to provide audio alert to audience before EAS emergency messages and required monthly test.

2/ On this date, cable systems shall provide: (1) a video message on all channels or other alerting techniques to hearing impaired and deaf subscribers, (2) an audio message and video interruption on all channels, and (3) a video message on at least one channel to all subscribers.

NOTE: Class D FM and low power TV stations are not required to have two-tone or EAS encoders. LPTV stations that operate as television broadcast translator stations are exempt from the requirement to have EAS equipment.

APPENDIX G

EAS REQUIREMENTS

REQUIREMENTS

BROADCAST STATIONS

Requirement	AM	FM	FM Class D	TV	LPTV 1/
Two-tone decoder (until 7/1/97)	Y	Y	Y	Y	Y
Two-tone encoder	Y	Y	N	Y	N
EAS decoder (7/1/96)	Y	Y	Y	Y	Y
EAS encoder (7/1/96)	Y	Y	N	Y	N
Audio message (7/1/96)	Y	Y	Y	Y	Y
Video message (7/1/96)				Y	Y

CABLE SYSTEMS

Requirement	
Two-tone decoder	N
Two-tone encoder	N
EAS decoder (7/1/97)	Y
EAS encoder (7/1/97)	Y
Audio message on all channels (7/1/97)	Y 2/
Video interruption on all channels, video message on one channel (7/1/97)	Y 3/

1/ LPTV stations that operate as television broadcast translator stations are exempt from the requirement to have EAS equipment.
2/ Shall transmit two-tone signal, but it may be from a storage device.
3/ Shall provide video on all channels or other alerting techniques to certified hearing impaired and deaf subscribers.

APPENDIX G

EAS REQUIREMENTS

AS PROPOSED FOR MDS SYSTEMS

Requirement	
Two-tone decoder	N
Two-tone encoder	N 1/
EAS decoder (1/1/01)	Y
EAS encoder (1/1/01	N
Audio message on all channels (1/1/01)	Y 1/
Video interruption on all channels, video message on one channel (1/1/01)	Y 2/

1/ Shall transmit two-tone signal, but it may be from a storage device.
2/ Shall provide video on all channels or other alerting techniques to certified hearing impaired and deaf subscribers.