

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System)	PS Docket No. 15-94
)	
Wireless Emergency Alerts)	PS Docket No. 15-91

**COMMENTS OF AMERICA’S PUBLIC TELEVISION STATIONS,
THE CORPORATION FOR PUBLIC BROADCASTING,
AND THE PUBLIC BROADCASTING SERVICE**

America’s Public Television Stations (“APTS”)¹, the Corporation for Public Broadcasting (“CPB”)², and the Public Broadcasting Service (“PBS”)³ (collectively “PTV”) applaud the Federal Communications Commission’s (the “Commission”) actions in its recent Report and Order to improve the effectiveness and reliability of the public emergency alerting process.⁴ In concert with technological advances and system-level adjustments, PTV recognizes that the best path forward will depend on education and outreach efforts to responders, alert originators, policy makers, transmission providers, and the general public. A comprehensive understanding of how the emergency alerting system works, why it does so, and

¹ APTS is a non-profit organization whose membership comprises the licensees of nearly all of the nation’s CPB-qualified noncommercial educational television stations. The APTS mission is to support the continued growth and development of a strong and financially sound noncommercial television service for the American public.

² CPB is a private, non-profit corporation created and authorized by the Public Broadcasting Act of 1967 to facilitate and promote a national system of public telecommunications. Pursuant to its authority, CPB has provided millions of dollars in grant monies for support and development of public broadcasting stations and programming.

³ PBS, with over 330 member stations, offers all Americans the opportunity to explore new ideas and new worlds through television and online content. Each month, PBS reaches nearly 100 million people through television and nearly 30 million people online, inviting them to experience the worlds of science, history, nature, and public affairs; to hear diverse viewpoints; and to take front row seats to world-class drama and performances.

⁴ *In the Matter of Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System and Wireless Emergency Alerts*, Report and Order and Further Notice of Proposed Rulemaking, FCC 18-94, PS Docket No. 15-94, 14-91 (rel. July 13, 2018) [hereinafter “Order and FNPRM”].

when it is appropriate to use will provide significant benefits beyond technical changes on their own. PTV recommends that the Commission pursue a broad education and outreach effort that includes all stakeholders.

The PBS Warning, Alert, and Response Network (“WARN”) system distributes wireless emergency alert (“WEA”) messages to commercial mobile service providers (“CMSP”) across the entire country.⁵ Connected directly to the Integrated Public Alert and Warning System (“IPAWS”) Federal Aggregator (“FedAg”) with a hardened pathway, PBS transmits all WEA messages for broadcast by its noncommercial member stations in each of the 50 states, and all inhabited U.S. territories (except the Northern Mariana Islands), reaching nearly 97 percent of the entire U.S. population. CMSPs receive these broadcasts free of charge, and are able to use them as a reliable, robust backup pathway in addition to their own FedAg connections. This unique and vital capability is a statutory requirement for public television stations.

I. The Commission Should Require CMSPs to Use the Freely Available C-1 Interface as a Robust and Reliable Backup Pathway.

To improve the effectiveness and reliability of WEA delivery, PTV urges the Commission to establish rules that require use of the resilient and secure WARN system as a redundant alternate delivery mechanism for alerts between IPAWS FedAg and CMSPs. There are, of course, many instances of Internet outages and single-pathway failures that have plagued not only emergency alerting, but also 9-1-1 services, public telecommunications, and other critical systems. This is the reason that the federal government invested in the WARN system in the first place. One only has to look to recent wildfires in California to see the need for redundant and resilient emergency telecommunications facilities. The Commission should mandate the deployment of the broadcast-based C-1 interface by all WEA-participating CMSPs.

⁵ See www.pbs.org/about/contact-information/warn (providing additional information about the WARN system).

It should be noted that in fulfillment of the WARN Act federal grant, public television stations obtained emergency generators and reinforced transmission capabilities that are specifically designed to provide uninterrupted carriage of WEA alerts to CMSPs in times of emergency. These capabilities are robust, resilient, and stand ready to support the reliability of the nationwide alerting system.

Frequent testing of the C and C-1 interfaces by CMSPs, along with coordinated end-to-end testing of the WEA system should be as regular and routine as the existing required weekly and monthly tests of the Emergency Alert System (“EAS”). The routine tests certainly do not need to be made public, as a “live code” exercise would, but they should be used regularly to verify that the entire system is functioning.

II. The Commission Should Address External Factors That Impact WEA Delivery, Including Interference From Unlicensed Devices.

Inconsistent delivery of WEA messages from CMSPs to the public stems, as the Commission noted, from a wide variety of external factors. One factor not enumerated by the Commission in the Order is the impact of deteriorating radio propagation conditions. Cellular wireless transmission frequencies extend from approximately 700 MHz through approximately 2100 MHz. Over this extensive range, signals travel in a variety of different fashions – with reflections, penetrating ability, atmospheric effects, and ambient electrical noise all playing an important role.

The Commission’s Technical Advisory Committee (TAC) itself stated in 2016: “[W]e could potentially be entering a period of rapid degradation of the noise environment. Such degradation would reduce our ability to meet the communications needs of the country. The principal negative impacts are likely to be reductions in the performance or reliability of wireless

systems or increases in their costs.”⁶ In addition, work by the Society of Broadcast Engineers (SBE) has demonstrated the increasing level of electronic “hash” from unlicensed devices operating throughout this electromagnetic spectrum. As SBE described in a 2016 filing with the Commission, “[t]here are strong enough radiated RF emissions from incidental radiators to cause interference in the VHF, UHF and microwave bands to licensed radio services in most environments.”⁷ It is important to note that these bands are used by public safety services, including EAS and WEA, as well as broadcasters, air and sea transportation, auxiliary communicators, and telecommunications services. All of this results in reducing effective coverage areas and potentially depriving listeners and viewers of the opportunity to receive and respond to timely emergency alerts.

PTV recommends that the Commission act to reduce emissions from unlicensed devices, incidental radiators, and other radio-frequency sources. Further, PTV suggests that any technical regulations concerning effective dissemination of WEA messages are promulgated with these deteriorating environmental conditions in mind. Namely, it is necessary to consider the potential effects on accurate, timely alerting if a user device becomes interfered with and loses connectivity due to the rising spectrum noise floor.

III. The Commission Should Expand Training and Education Opportunities Across the Alerting Chain, Beyond Existing FEMA Courses.

Emergency managers, incident commanders, and officials in the alerting chain of command are typically not specifically trained in origination procedures, nor do they often have a deep understanding of the technical and physical capabilities (and limitations) of alerting technology. Existing FEMA independent study courses IS-247a and 251, while helpful, are

⁶ FCC Technological Advisory Council, Fourth Meeting Report, at 23 (Annex 4) (Mar. 24,2000)

⁷ See Comments of the Society of Broadcast Engineers, Incorporated, In the Matter of Technological Advisory Council Noise Floor Technical Inquiry, ET Docket No. 16-191, 22, *available at* <http://sbe.org/sections/documents/20160811PublicNoticeDA16-676NoiseStudy.pdf>.

insufficient to ensure a thorough familiarity with the emergency alerting system, the roles and responsibilities of the originator, and the overall performance of the system. IS-247a (designed for alert originator training) was last updated in 2013, and IS-251 (a best practices course) was last updated in 2014. Both online courses are fairly rudimentary, and there is no practical examination or demonstration of proficiency required.

Vendor training on equipment is highly inconsistent. Experience has shown that originators sometimes fail to engage WEA, for example, simply due to lack of awareness of the current state of alerting capabilities. The turnover rate at alert origination facilities may also render such training ineffective. With over twenty approved software applications capable of generating EAS and WEA messages, there are currently no uniform standards or specifications. Even users with significant experience may find that their experience is incompatible when relocating to a new employer using different EAS or WEA software, which creates confusion and increases the potential for human error.

One model of success on this front comes from California, where the state legislature recently passed SB833, which provides in part that “the safety of local communities requires designated alerting authorities to ensure they have multiple operators, adequate testing and training, and functional equipment and software.” SB833 goes on to provide that “training shall include, at minimum, information regarding the evaluation, purchase, and operation of Wireless Emergency Alert system (WEA) and the Emergency Alert System (EAS) equipment and software, including capabilities that address communications for the access and functional needs community; the technical capabilities of the WEA and EAS function within an alert system, pursuant to current Federal Emergency Management Agency (FEMA) and Federal Communications Commission regulations . . . and the alert and warning guidelines developed” pursuant to the statute. PTV applauds the proactive nature of this law in promoting training and

hopes that it serves as a model for other state and national efforts to implement comprehensive education strategies.

PTV recommends that the Commission leverage public television's experience, reach, and unparalleled level of public trust⁸ to assist in bridging the education and outreach gap between State Emergency Communications Committees ("SECC"), emergency managers, and other stakeholders in the alert and warning environment. With the necessary federal funding to support any such work, public television could use proven workforce education capabilities and its nationwide presence to collaborate with emergency management and public safety professional organizations to develop and implement best practices, training curricula for origination staff, and overall support for the EAS and WEA program.

Several public television stations are already represented on SECCs, Local Emergency Planning Committees ("LEPC"), and other preparedness bodies. Public television stations employ subject matter experts on signal transmission, alert and warning systems, digital technology, effective public outreach, and workforce education. Several DHS Office of Emergency Communications State-wide Interoperability Coordinators ("SWIC") have also served as PBS employees. With a long history of public engagement and industry partnerships, a foundational public service mission, and a consistently high level of public trust, PTV can help support nationwide education and outreach to all stakeholders.

Conclusion

PTV agrees with the Commission that changes to the WEA program are necessary. Both technical and operational aspects must be improved to create a trustworthy system that can quickly, accurately, and reliably warn members of the public in danger. To that end, PTV urges

⁸ See Americans Rate PBS and its Member Stations Most Trusted Institution for the 15th Consecutive Year, Feb. 12, 2018, available at www.pbs.org/about/blogs/news/americans-rate-pbs-and-its-member-stations-most-trusted-institution-for-the-15th-consecutive-year.

the Commission to require CMSPs to install, test, and operate the resilient and secure WARN system as a backup means of receiving IPAWS alerts from FEMA. PTV recommends using the freely available C-1 interface as the hardened, redundant pathway to ensure the necessary level of reliability for WEA messages.

PTV calls the Commission's attention to the growing challenge of radio frequency interference across the spectrum band. As more devices produce more incidental signals, the coverage of public safety radio systems, broadcasters, and wireless providers is being reduced, particularly in urban areas. Taking proactive, affirmative steps to reduce noise production from unlicensed devices will promote more effective, reliable dissemination of alerts and public safety communications. Furthermore, greater training opportunities and outreach to all levels of the alerting chain are essential to providing error-free and timely warnings to the public. PTV stands ready to work collaboratively with professional organizations to develop and share alerting best practices.

Respectfully submitted,

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