**Before the**

**Federal Communications Commission**

**Washington, D.C. 20554**

In the Matter of )

)

The Emergency Alert System ) EB Docket No. 04-296

) EB Docket No. 15-94

Frank W. Bell )

**Re:** **EAS-1.-NBNCBC-Telecommunications-Outage-Report-2017-Firestorm**

The Telecommunications Outage Report: Northern California Firestorm 2017 was very detailed. It is the next attachment.

While other methods of delivering alerts had serious issues, these concern WEA and cell service, ETN (Reverse-911), internet access, landline (copper and fiber IP Voice), power outages, cable TV, First Responders announcement bullhorn or door knocking, neighbor or calls from friends and relatives, and press events. These are relevant to the subject but outside of the focus of this filing category.

Radio EAS only was effective for 2% in that survey. How much it was used is not apparent in the report. Some report previously stated that EAS was not used. It may have been only quite limited because of the affected areas being quite small compared with the Radio Broadcast coverage area, and the difficulty of area identification verbally. So, while the delivery operation was probably not hindered by transmission problems resulting from the fires and perhaps less by the power failures, the lack of the ability to deliver alerts by map polygons currently is relevant to the alerting decisions made by Emergency Managers. Therefore, improving radio broadcast selectivity and ATSC 3.0 effectiveness to smartphones is important for the mix of methods for improved results in the future.

The selectivity problem with EAS currently is an important reason for Emergency Managers not making use of this method. Another important reason is that this method is difficult to arrange for use by emergency managers as currently it overrides program content. With digital broadcasting it is possible to avoid this, and such capability is incorporated into the ATSC 3.0 AWARN/AEA standard A/331. It is possible to also improve EAS on HD Radio, and provide a selectivity mechanism. Then it would be possible to select the specialized receivers of First Responders and incorporate EAS into an exercise. This would enable operational familiarization of EAS by Emergency Managers. This lack of familiarity was a problem in the Hawaii missile alert. One Emergency Manager, Peter Wood, asked me how a First Responder could incorporate this into an exercise.

A complement to that would be to improve the familiarity of Emergency Managers with these various alerting technologies. Sending test messages to the IPAWS JITC lab is one possibility

Alerts via radio hams is listed as 3, being 0.18%. So, this supports radio as a delivery medium.  The Other category was 17%. This may include CB radio, which in some respects could be comparable to ham radio operators.

**Conclusions based on further information;**

1. The lack of use of EAS in those circumstances is understandable given that a mass area notification could give rise to for major evacuations which is preferable to be avoided to enable emergency traffic to flow. Therefore, the ability to have selectivity and improved familiarity with an improved EAS is desirable.
2. Reportedly 44 people died. When EAS is used, it is proven to be effective. An example is the 2009 earthquake and tsunami in Samoa. In American Samoa there were 29 fatalities, when EAS was activated as a tsunami alert by a radio station. The same earthquake and tsunami impacted Western Samoa, which is under New Zealand protection. There was no alert sent to the public and there were 141 fatalities. The numbers vary a little with different reports, these were from Wikipedia. This is a ratio of 4.86 to 1. It would be reasonable to expect that if an improved EAS were used in the California wildfires, there may have been 9 fatalities.
3. The Gatlinsburg wildfires After Action Report did not provide the details of this recent California report. Nonetheless, the conclusions 1) and 2) above appear to be relevant
4. With selectivity implemented in consumer receivers, it would be a matter of adding a relatively small amount of additional code to implement the faster processing for an Earthquake Early Warning System with a goal of alerting within three seconds.
5. The third file is an interview which was published in RadioWorld and then TVTechnology trade news recently. At the end is a comment I made regarding the aspects of EAS in the interview which TVTechnology accepted and included.

Sincerely,

Frank W. Bell

CEO, CTO

Kybernetix LLC