



Meeting Minutes Nevada Earthquake Safety Council Joint meeting with Utah Seismic Safety Commission

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|------------------------|-----------------|--|----------------|
| Attendance | DATE | Tuesday, November 10, 2015 | |
| | TIME | 8:00 A.M. | |
| | LOCATION | University of Nevada, Reno Harry Reid Engineering Laboratory, Rooms 109/110 1664 N. Virginia St. Reno, NV 89503 | |
| | METHOD | In-Person | |
| | RECORDER | Janell Woodward | |
| Council Members | Present | Staff and Others | Present |
| Alan Bennett | X | Janell Woodward (DEM) | X |
| Michael Blakely | | Rick Martin (DEM) | X |
| Ian Buckle | X | Henna Rasul (DAG) | X |
| Wayne Carlson | X | Karen Johnson (DEM) | |
| Oscar Delgado | X | | |
| Craig dePolo | X | Utah Seismic Safety Commission | |
| Jim Faulds | X | Meldee Love | X |
| Tim Ghan | X | Rick Allis | X |
| Jeff Hahn | X | Steve Bowman | X |
| Graham Kent | X | Adam Hiscock | X |
| Chris Lake | X | Patrick Tomasino | X |
| Ron Lynn | X | Craig Kerkman | X |
| Connie Morton | X | Keith Koper | X |
| Jim O'Donnell | X | Bob Carey | X |
| Vance Payne | | Sheila Curtis | X |
| Jim Reagan | | Leon Berrett | X |
| Woody Savage | X | | |
| Stephen Silberkraus | X | Mark Stephenson (Idaho) | X |
| Wanda Taylor | X | Michael Hornick (FEMA) | X |
| Jim Werle | X | | |
| Mike Wilson | X | | |

1. CALL TO ORDER AND ROLL CALL

Chair, Ron Lynn called the meeting to order. Janell Woodward called roll and a quorum was established for Nevada. The Utah Seismic Safety Commission called roll as well.

2. PUBLIC COMMENT.

Chair, Ron Lynn opened discussion for public commentary for this meeting. There were no comments.

3. WELCOME AND INSTRUCTIONS

Chair, Ron Lynn welcomed everyone to the joint meeting. Introductions were made for everyone in attendance at the meeting. Ron also mentioned Dr. Ahmad Itani who chairs the Civil and Environmental Engineering Department at UNR and graciously provided lunch and refreshments for the meeting.

4. APPROVAL OF THE MEETING MINUTES.

Chair, Ron Lynn asked for a motion to approve the minutes from the August 5, 2015, NESC meeting. Wanda Taylor made a motion to approve minutes as submitted and Graham Kent seconded. There was no discussion. All were in favor and the motion passed unanimously.

USSC Chair, Leon Berrett asked for a motion to approve the USSC minutes. USSC minutes were voted on by the members present and approved as submitted.

5. DISCUSSION OF MULTHAZARD MONITORING NETWORK.

Graham Kent provided an overview of how the University of Nevada Seismological Laboratory (NSL) is utilizing its cameras as a multihazard monitoring network. The last time Nevada and Utah met together, the central portion of the Nevada did not have much instrumentation but that has greatly changed and Nevada is getting close to having a statewide network. Nevada has had approximately 15,000 earthquakes to date with a dozen or so greater than a magnitude 4.0, and 148 magnitude 3 events. Most of these have been in northwest Nevada with the Sheldon sequence.

Graham indicated that conversation among the earthquake community often covers the lack of money with regard to earthquakes. The NSL has been able to put up cameras that are utilized to help with monitoring of other hazards, including fire. These cameras have allowed for early recognition of wildfire which in turn allowed the fire to be put out quickly and thus saving a lot of money with regard to response. The NSL has partnered with the Bureau of Land Management (BLM) to place most of these cameras.

Reliability of earthquake early warning is a huge issue questioning whether they will be able to get the information to everyone reliably? Of note, cell phone data does not stay on microwave for very long but moves into fiber. A known issue has been with terrorism and criminal attack cutting fiber lines which take the system down. Additionally, all cell phone providers have agreement to share fiber with each other. Numerous examples were provided showing instances where fiber was disabled. For this reason, cell phone earthquake early warning is not fully reliable.

The NSL is building their system with enough build-out to still be able get information out should one part of the system go down. In terms of finding money to pay to build out the systems, fire will be able to provide this money. Early warning can make a fire event smaller. However, earthquake can never make an event smaller.

They are crowd sourcing their system and plan to set up a program next summer to have people volunteer to watch the cameras. More eyes on the cameras allow a greater opportunity to catch fires as early as possible. Again, the cameras utilized to catch fires as

early as possible as well as flooding or weather events are a way to bring in money to be utilized for earthquakes and build out the seismic networks.

A question was asked whether the systems had enough bandwidth to handle other programs. Graham confirmed that there is enough bandwidth. The real risk is potential loss of power that would take a system down.

Another question was how much of their budget is utilized for this system. Cost has gone down exponentially and equipment has been very resilient. Costs are mainly for personnel.

A motion was requested for resolution to support the NSL multihazard monitoring network. Stephen Silberkraus made a motion that the NESC provide a resolution supporting the concept of multihazard monitoring network build as well as reaching out to California having the support of NESC. Woody Savage seconded the motion. Discussion included equipment. Ron Lynn stated that he could see nothing but a positive benefit for both Nevada and California. Craig dePolo voiced his agreement. All were in favor and the motion passed unanimously.

6. PERFORMANCE OF BUILDINGS AND NONSTRUCTURAL COMPONENTS IN THE 2014 SOUTH NAPA EARTHQUAKE.

Ron Lynn and Graham Kent went to Napa after the 6.0 earthquake and toured the area. Original damage estimates were about \$500 million but this has been revised back to \$100-200 million in damages, most of which was underground pipes and infrastructure. They met with the California Seismic Safety Commission which included testimony which was quite moving hearing the stories of local citizens and their experience. Business resiliency issues were brought to the forefront with this earthquake. Impacts for earthquakes are far reaching with some businesses required to shut down for a period of time and some businesses never reopening. Recovery can take 10 years or more. There were issues with the sprinkler systems with additional damage secondary to not having keys to turn off the sprinkler systems. Graham added that people were very passionate about the sprinkler systems. In this case, some were going to be out of their buildings for up to a year with most of the contents destroyed from water damage.

Interestingly, the Napa area had a 5.1 previously and the Mayor encouraged certain types of retrofit. Those homes which were retrofitted were not red tagged in the Napa earthquake, but those who did not retrofit were red tagged as they slipped off their foundations. The cost of this retrofit was \$5000 or less. This was an example of utilizing the smaller earthquake to encourage readiness for something bigger.

Setback law was also discussed regarding setback from the actual fault. The actual damage path for the Napa earthquake was sometimes more than 100 feet.

Performance of retrofitted unreinforced masonry (URM) buildings versus non-retrofitted URMs was discussed and is being studied. There was a lot of nonstructural damage.

While California is fabulous at responding to the major components of an earthquake such as in Northridge, Ron felt the Napa community seemed largely unprepared for this earthquake.

Mike Hornick from FEMA lives about 25 miles from the epicenter of the Napa earthquake and was part of the initial earthquake clearinghouse activation. This earthquake was considered a boutique earthquake and was confined geographically. Mike talked about the

extent and types of damage. Interestingly, there was a major event the day prior to the earthquake so it was clear what could have happened had the earthquake occurred a week before. Clearinghouse

A question was asked regarding the reason for the difference in preparedness between Northridge and Napa. It was felt that Northridge was more prepared secondary to the larger metropolitan location and the larger outreach request for help.

With regard to the fire sprinkler keys, Ron indicated that in mutual aid agreements, they try to standardize the sprinkler keys. In the case of Napa, those responding did not have the proper keys needed to turn off the sprinklers.

A question was asked who Clearinghouse reporting was made to. Mike Hornick indicated that information was reported at the earthquake clearinghouse at their evening meetings during the Napa earthquake. This information went out through the news media as well as CalOES. For events 6.0 and above, standard procedure activates the earthquake clearinghouse automatically for the collection of data. The Incident Command Post has a representative present at the Clearinghouse so information flows freely between the two.

Graham Kent suggested that Nevada have someone embedded in the clearinghouse for neighboring states as there is likely good information to be gained by all. Anne Rosinski is the current chair. The next large exercise will be Cascadia Rising with both FEMA Region IX and X participating with large geographical participation as well. The California Earthquake Clearinghouse plans to exercise at this time as well.

It was indicated that the Nevada Bureau of Mines and Geology and the Utah Geological Survey have a Memorandum of Understanding (MOU). In the Wells earthquake, Utah had the first crew on site as they were closest.

Ron asked that the topic of the CA earthquake clearinghouse be placed on the next agenda. We would want the Division Manager to understand this could possibly be a funding opportunity.

Steve Bowman suggested that the Western States get together and develop some type of template for earthquake clearinghouse interoperability. Currently most states have their own clearinghouse. However, they are not interoperable and there is no capability to share information back and forth. An open source digital clearinghouse that all states link to was recommended that would allow states to interact with each other.

Ron Lynn asked if a digital clearinghouse would be something that FEMA would be interested in undertaking. Mike Hornick indicated that FEMA might be interested in this type of project. Discussion included Presidential declarations and the fact that states need to act independently until the process runs its course. Western States Seismic Policy Council (WSSPC) has been involved with this in the past.

Ron asked Craig to talk with Patti Sutch from WSSPC about the Clearinghouse. Ron will call the Central United States Earthquake Consortium (CUSEC) as there was a question of whether they were working on a clearinghouse.

7. PRESENTATION BY WELLS EARTHQUAKE INCIDENT COMMANDER.

Former Incident Commander, Rich Harvey provided a presentation regarding his experience as incident commander for the 2008 Wells Earthquake. This included an overview of how

Mr. Harvey was sent to Wells as well as the lessons learned on how to deal with the public and media in an event such as this earthquake. Mr. Harvey happened to be in Elko conducting interviews when the earthquake occurred. This was a 6.0 earthquake followed by a 5.3 aftershock and many more aftershocks.

With regard to the Incident Command System procedure, there was little knowledge by command staff about earthquakes at the time the earthquake occurred. Taking command of the incident at 7 am, they were able to come up with an incident action plan by 9 am, only 2 hours later. Providing agencies with an incident action plan helped to bring order to the situation.

Mr. Harvey discussed the importance of waiting until help is requested. Communication with the public was also a lesson learned as they took time to understand the concerns the public had as opposed to concerns of the Incident Command Team. Another issue included access to engineers to help inspect buildings. Evacuating a building and then needing a Certificate of Occupancy to re-occupy a building became an issue with Wells having only one employee to issue those certificates. Another problem was determination of how far out from the earthquake should be inspected. Some of this is determined by the partners brought to the event. Finally, Mr. Harvey indicated it was important to watch out for assumptions. Wells had the assumption they would receive a Presidential declaration. There was a City declaration, County declaration and State declaration. In the end, Wells did not meet the threshold for a Federal declaration because they had earthquake insurance. Insured coverage did not count so they did not meet the Federal declaration threshold.

A question was asked whether deaths would have helped to meet the Presidential declaration threshold. Mr. Harvey indicated that it is really an economic threshold that must be met for disaster declaration.

The issue of need for placards also was raised. Unfortunately, the first responders were largely unfamiliar with what was needed. Ron Lynn suggested that perhaps a better job needs to be done reaching out to the rural areas to get them the placards that are needed for an earthquake emergency. Ron reiterated that it needs to be building officials and inspectors to tell the first responders when it is unsafe to enter a building. It was agreed that every county should have what they need.

Another question was how familiar Wells was with regard to the National Incident Management System (NIMS). First responders were very familiar. The extended responders were less familiar, such as building inspectors.

Wayne Carlson added that they managed the earthquake insurance for Wells. They needed to activate their Employee Assistance Program (EAP) in order to support employees in managing the stress of the incident.

Annie Kell reminded everyone that earthquake insurance is a very important factor in personal responsibility prior to an event.

8. NEW EARTHQUAKE RESPONSE HANDBOOK.

Craig dePolo, Bob Carey, and Rich Harvey provided a presentation regarding the new earthquake response handbook that is currently in the works. This is a multistate project currently through WSSPC. This idea evolved out of the Wells earthquake and the fact that the incident commander had stated that it would have been nice to have a handbook for

earthquakes similar to what is available for fires. At this point there is a draft of this booklet. The process has taken quite a while. Bob Carey handed out a draft copy of the table of contents to date.

The intended user of this handbook really is the rural sheriff who does not have opportunity to attend a lot of training and would find this handbook very helpful in the event of an earthquake event.

Discussion included post-earthquake assessment evaluations and the placards. Assessment evaluations are covered items with FEMA for payment while inspections are not. Clarification was that an evaluation done in the first 48 hours is different than an inspection.

Graham Kent added that in the Napa earthquake, San Francisco sent iPads preloaded with ATC-20 and Rover information. These were not utilized but nonetheless were available if necessary. Suggestion was made that Nevada could purchase an iPad or 2 for each county with this information to be utilized. The information on the iPads was a FEMA program.

Sheila reiterated that the handbook being created is going to be for the emergency managers and incident commanders and not for the building inspectors and others. This will be the flip chart that is basic and not real technical. The intended user is not familiar with earthquakes.

9. UPDATE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

Michael Hornick from FEMA Region IX provided an overview of the FEMA Region IX earthquake program. This included an overview from the top down, including national to local levels. The National Earthquake Hazard Reduction Program (NEHRP) is currently in the process of renewal. The National Earthquake Technical Assistance Program (NETAP) is the program that provides technical assistance training to each state. Janell Woodward has already submitted training requests on behalf of Nevada but FEMA Headquarters is not yet ready to accept these requests. This will hopefully be opening up at the end of November. This training is supplied through Applied Technology Council (ATC) who supply the experts to provide this training.

From the local level, FEMA has a new regional administrator named Bob Fenton. He took Nancy Ward's place.

ATC provided protocol that affected building within 1000 feet of a seismometer for the Napa earthquake. This additional information came from the seismometer in the Napa area. Some buildings are still in need of repair since the earthquake while others have been repaired. Some heavy tiles had come off of buildings which ended up due to improper anchoring.

Ron Lynn brought up an article regarding saving money with mitigation. Ron stated he will get this article to Janell who will send it out to everyone. Discussion continued regarding funding for mitigation.

10. PRESENTATION ON UNIVERSITY OF NEVADA RENO (UNR) EARTHQUAKE ENGINEERING LAB.

Ian Buckle provided an introduction to the Shake Lab. This included a quick tutorial of structural engineering and how buildings react to earthquakes. Also included was a history of the Center for Civil Engineering and Earthquakes.

11. TOUR OF SHAKE LAB.

The group was divided into three groups who then were provided a tour of the UNR Earthquake Engineering Laboratory.

12. UPDATES REGARDING EARTHQUAKE ENGINEERING RESEARCH INSTITUTE (EERI) REPORT, RAPID VISUAL SCREENING (RVS) PROGRAM, UNREINFORCED MASONRY (URM) GUIDE, AND SALT LAKE CITY (SLC) SEISMIC INITIATIVES.

An overview of several projects Utah is working on was provided by Utah. A copy of the final report of the project put together by the Utah Chapter of EERI. This was provided to The Governor of Utah as well as the legislature. This report was put together to provide guidance of how to respond to and recover from a 7.0 earthquake. This scenario was for the Wasatch fault near Salt Lake City. They picked the Salt Lake City area for the scenario because this area affects about 80% of the state. Utah has a large amount of URM buildings within the state.

Resiliency is a very important part of this. One of their local reporters was assigned to go to Joplin after the tornado to cover the story. All of the significant buildings in her old neighborhood were gone. Joplin initially had great response but things greatly changed down the road as politics changed. The real story has been the economic effect of the disaster.

Discussion also included Utah's website which includes much of the information obtained.

Utah was able to obtain funding from the Governor to allow them to address the schools. They have yet to assess the charter schools which often go into old URM buildings.

Additionally, they have been able to utilize the RVS program to track their findings of their buildings. This has allowed them the ability to quickly push information to a clearinghouse as well as creating reports quickly. A guide is in the process of being developed explaining what residents can do to reinforce their homes.

The Los Angeles Mayor has implemented a law declaring URM buildings as killer buildings and requiring URM buildings to be fixed over the next perhaps 20 years. They are not providing any funding to accomplish this. However, other cities like San Francisco have not made this decision.

13. SOCIAL MEDIA UPDATES AND ENTRIES ON FACEBOOK AND TWITTER.

Sheila Curtis provided an overview of the importance of using social media to provide timely updates when an event occurs. Utah has a Facebook and Twitter account. In the future, members of the commission will help to update these.

Chris Lake indicated that social media is widely utilized and we could perhaps utilize it to gain information as well. In a hospital shooting event, the Twitter time stamp beat the time stamp of the 911 call.

The point was made that as we have become more technical, we have in turn become less resilient. We need to know how to function when the technical systems are unavailable.

14. INITIATIVES TO WORK TOGETHER IN THE FUTURE.

Ron Lynn led a discussion regarding what could be done working together as well as working alone to work for the future.

Ron suggested that NESC refer to the list of ideas in Utah's report.

Wanda Taylor indicated that marketing is an area that should be addressed throughout the western states. A suggestion was made to have a joint committee. Both northern and southern Nevada did billboards and received good feedback. Ron reminded everyone to keep at it and not get frustrated. This has to be an ongoing process.

Because of the issues related to the Open Meeting Law, Ron suggested that this could possibly be done through WSSPC.

Graham Kent proposed the project of an open source clearinghouse with the western states. Western States could get together to research how to do this. Additionally, utilization of drones was also mentioned. Graham suggested this could be a several day meeting.

Leon Berrett suggested that perhaps this could be done in conjunction with the WSSPC Spring meeting. Graham felt this could better be a special meeting separate from the annual WSSPC meeting focusing only on this topic.

Ron indicated that he also could facilitate a meeting in Las Vegas separately from NESC as he has the infrastructure. This would need to be less than a quorum of members participating. Of note, working groups are required to follow the open meeting law. Working under WSSPC would allow us to avoid the open meeting law issues. This might also open up some funding for the project.

Graham also suggested business resiliency as an area that states could work together.

Ron suggested that we encourage adoption for building re-occupancy after an event. The question of how long will it take to get back into a hotel after an event is a question that needs to be asked.

Ron and Graham will meet with NDEM Chief Caleb Cage regarding California's desire to work together with Nevada and possibly other states. California has money and Nevada would benefit from working with them.

Summary of suggestions include:

- Clearinghouses.
- URM programs
- Other at-risk structures
- Code changes
- Business Resiliency

15. FINAL COMMENTS.

Ron took a moment to recognize and thank the National Guard members which were present at the meeting as the following day was Veteran's Day.

Leon Berrett thanked Nevada for the opportunity to meet together once again with both states. He felt the meeting was very productive and hopes it will continue in the future.

Mark Stephenson reiterated the concern for Idaho should an event occur and was appreciative of the opportunity to be included.

Mike Hornick reiterated that with business resiliency you will get 4x return on every dollar spent for mitigation efforts.

16. PUBLIC COMMENT

Chair, Ron Lynn opened the meeting for public comment. Janell indicated that Patti Sutch from WSSPC asked everyone be reminded of the work being done on the incident commander handbook. Connie Morton recognized Janell for all of her work putting the meeting together.

17. ADJOURN

Chair, Ron Lynn declared the meeting adjourned.

DRAFT