



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Mital, Simpson, Brown, Helgeson, and Manning
FROM: Mel Damewood, Alan Frazier, Frank Lawson, Mike McCann, and Todd Simmons
DATE: December 2015
SUBJECT: Electric Utility Emergency Preparedness Planning Activities
OBJECTIVE: Provide Board with Information

Issue

Provide Board a high level overview of Electric Utility Emergency Preparedness Planning activities.

Background

The Electric Utility Emergency Preparedness plans includes Generation, Transmission, Substations, and Distribution. Investment in infrastructure and the maintenance of each system is critical to prepare us for winter storms, isolated wind events, earthquakes, floods, and acts of sabotage. With this in mind we take an all hazards approach to preparedness and reach across all departments within EWEB to create three deep staffing levels for all critical positions with our Incident Command System or ICS structure.

All incident response at EWEB uses a version of the Nation Incident Management System or NIMS of which ICS is a major component. For the Electric Utility we stand up the ICS with an Incident Commander, Communications Officer, Liaison Officer, Safety Officer, Planning Chief, Operations Chief, Logistics Chief, and Finance & Administration Chief.

The Incident Commander is responsible for protecting life and property, establishing command, developing the appropriate command structure, creating incident objectives, developing an Incident Action Plan, coordinating all strategic goals and tactical objectives, maintaining a manageable span of control, authorizing additional resources as needed, and maintaining accountability for responder safety, public safety, and task accomplishment.

The Incident Commander accomplishes all this by utilizing the staff within the structure. The Incident Commander takes direction from the Incident Management Team, made up of at least two Leadership Team members and the General Manager. The Incident Management Team reports to the Board of Commissioners.

Discussion

Transmission and Distribution Planning:

An important consideration being included in the Electric System Master Plan, currently being developed, is the resiliency of the system under compromised conditions. The concept of the “resilient spine” was created to articulate the concept of linking a variety of generation sources (both local and the regional grid) with EWEB’s most important emergency loads. Over the next several months, culminating in April 2016, the Board will receive updates on aspects of the Electric Master Plan.

Over the past few years, EWEB has concentrated electric infrastructure projects on those projects that generate improvements in compulsory areas, including safety, regulatory, and obligation-to-serve (customer work). Additionally, some of the projects related to improving resiliency and reliability are the following:

- EWEB has initiated a multi-year plan to replace aged transmission oil breakers with modern gas breakers. In 2015, seven breakers were replaced, with approximately forty remaining.
- The Holden Creek substation is an example of a project that links local generation with a more reliable transmission connection.
- In 2013, EWEB commissioned a fully-functioning Backup Control Center (BCC) at the Roosevelt Operations Center (ROC). This facility operates completely independent of the primary control center (PCC) at Headquarters, and was driven by regulatory requirements.
- Sacred Heart Hospital was provided a dedicated feeder, along with a spot network.
- Field-Located distribution switches (e.g. “live front” switches) are being systematically replaced with safer, more reliable devices.
- In some locations, distribution feeders are being looped for improved reliability (e.g. Owl Road).

Electrical Assessor Training – We trained (~40) and certified about 20 additional EWEB assessors to assess storm damage.

Because we do not have AMI, Responder value for yielding accurate customer outage accounting is only as good as the data that is manually input and managed within Responder. This task falls on the Electric Distribution Coordinators who have many other tasks during the storm. We have taken several steps to prioritize storm duties to enable more time to be dedicated to Responder data management.

Downed com/cable wire occupied us during the last storm. We have a Comcast/Century Link approved plan to either cut in the clear, or delineate com/cable wire with different caution tape and secure in place.

Generation:

Generation's emergency planning and preparation efforts begin with and are closely tied to FERC's Dam Safety Program. Under the Dam Safety Program, Generation routinely completes an analysis of potential dam failure modes at all McKenzie River hydroelectric facilities. While potential failure modes often focus on water/river related events (storms and floods), seismic risk analysis, mitigation and preparation are also part of the effort. EWEB works with and through FERC's Portland Regional Office on evaluation, analysis and mitigation of dam failure modes.

As part of the Dam Safety Program, Generation developed and maintains an Emergency Action Plan (EAP) designed to guide EWEB's actions in a dam safety emergency. The EAP in addition to outlining emergency notification steps and responsibilities, provides coordination and contacts for all upriver resource and emergency response agencies. As required by the FERC, EWEB drills on the EAP at least twice annually and completes a full functional exercise using the EAP at least once every five years.

EWEB Generation also participates in FERC's Surveillance and Monitoring Program for dam safety. The Surveillance and Monitoring Program is directly tied to the potential failure modes identified for each project and includes measures such as seepage and ground movement monitoring. EWEB uses remote monitoring cameras, seepage weirs, piezometers, ground survey and canal level monitoring as part of the program. At the Leaburg and Walterville Projects EWEB uses a hazard mitigation control system (HCMS) for early warning of canal level changes that might indicate overtopping or a canal breach. Every five years as part of the FERC's Dam Safety Program EWEB hires an independent consultant to physically review the projects, re-evaluate the potential failure modes, and review all technical documents related to dam safety. Finally, EWEB and FERC staff complete an annual dam safety inspection of all McKenzie River hydroelectric projects for compliance and opportunities for improvement in emergency preparation.

The Carmen-Smith Project also has an early warning system with audible alarms (sirens) signaling a dam safety emergency that is tied into real time monitoring at Smith Dam. Sirens located at Trail Bridge Campground and at Olallie Campground will sound in the event of a significant dam safety issue, warning the public to evacuate from the water area and seek higher ground. While Leaburg and Walterville do not currently have a similar system, EWEB is in discussions with the University of Oregon and the U.S. Geological Survey (USGS) to add early warning / early detection earthquake monitoring at EWEB's lower river projects as part of an existing network of earthquake detection in western Oregon.

In addition to planning for emergency response, Generation, through the normal course of business, maintains many tools, equipment, processes and procedures that will be valuable to EWEB and our community in the event of an emergency. Generation maintains onsite staff housing at each of the McKenzie hydroelectric power plants. Personnel are available or on call 24/7 at each of the facilities. EWEB maintains three modes of communication between EWEB trading and dispatch and the hydro facilities: phone, radio and satellite phone. The Carmen power plant has black start capability through on site generators, which means it can be returned to service (operation) without relying on the larger electric grid for support. The Leaburg and Walterville plants do not have this capability at this time. Both the Carmen-Smith and the Leaburg/Walterville projects have emergency generators, onsite fuel supply and a variety of heavy equipment / construction equipment to support emergency response and recovery. EWEB also coordinates through McKenzie Watershed Emergency Response

System (MWERS) with other upriver entities that maintain emergency supplies and equipment, as was evident last winter during the roll gate failure at Leaburg Dam.

The Carmen-Smith Project has worked with the Forest Service, ODOT, Oregon State Police and others on upper watershed emergency response coordination, including the identification of helicopter landing zones in the project vicinity. Because of the project's proximity to the McKenzie River Trail and Oregon Highway 126, interaction and coordination with these agencies already happens periodically, and this helps to establish a working relationship for future events.

Finally, it is important to point out that Generation staff routinely participate in emergency preparedness and response drills and simulations. While most of these activities are structured as part of EWEB's Dam Safety Program, Generation, as an active member of MWERS, has participated in previous MWERS spill response drills. Generation has access to MWERS spill response supplies and equipment in addition to spill response supplies stored onsite as part of the SPCC program. EWEB's Generation management team, including Generation Engineering, is certified in ICS system operation, and all hydroelectric staff have had or will soon have a basic level of ICS training that will enable them to operate under an ICS structure.

Logistics:

Integrated Logistics Plan

EWEB Logistics are coordinated using the ICS structure and creating a Service Branch and a Support Branch. The Service Branch includes the Communications Unit which creates and controls the Communications Plan. EWEB deploys six levels of communications for redundancy and has a project to look at web based ICS communication tools. The Support Branch includes supplies, facilities, and fleet. In addition to converting to bio fuels and maintaining fuel for backup generators and response vehicles, the Support Branch has also created rapid response teams to accommodate employees on site for extend operational periods. The Logistics Plan also includes several Wire Watch teams that have been trained and can be deployed from several other departments, significantly reducing the labor resource load of qualified electrical workers.

Technology:

21st Century

EWEB deployed new components of our outage communication program, utilizing text messaging and estimated times of restoration. An interactive web based outage map is in the works for 2016.

ARCOS

EWEB is currently managing a project to increase our call out capabilities for 17 different departments, expediting the deployment of first responders and decreasing outage time for multiple systems.

Assessment Tools

New electric assessment forms (DoForms) have been developed that will communicate photo-

documented damage from the field using iPads or cell phones. The forms are streamlined to gather data quickly and use in-office staff receiving the data in real time to do more post processing and data organization. This allows assessors to stay deployed in the field, and eliminates the need to return paper damage assessments back to the Roosevelt Operations Center. It will also allow Engineering to start designing repair work in real time as electronic assessments are received minutes after each assessment is completed. Still under construction, each assessment is geo-referenced data so can be provided to Responder to allow view of where assessments have occurred. All of this creates a more complete picture of storm damage and provides better deployment of resources.

Resource Tracking

New RF Sign-in/sign-out (EWEB) badge readers were purchased to help with FEMA storm labor reporting. It also provides better visibility of staff deployed to work during the incident.

Exercises:

Annually – EWEB participates in a regional restoration drill sponsored by our regional reliability coordinator, PeakRC.

In October, EWEB engineering, systems operators, and electric operations simulated a complete system blackout, and tested the process to restore power to the utilities top ten most critical loads including water, communications, and selective emergency services. Changes in processes and potential system infrastructure changes will result from this simulation.

As part of annual regulatory requirements, EWEB system operators transfer control of the EWEB system to our Backup Control Center (BCC) located at the ROC. Additionally, the system equipment at the BCC is tested periodically throughout the year.

EWEB's Electric Generation Division, supported by Generation Engineering, actively prepares for and drills on emergency response measures related to EWEB's McKenzie River Hydroelectric facilities. As a requirement of the Federal Energy Regulatory Commission's (FERC's) hydroelectric licensing program, EWEB participates in FERC's Dam Safety Program. The dam safety program includes evaluation and planning for potential dam failure scenarios, and provides a framework for emergency planning, preparation and response. All three of EWEB's McKenzie River hydroelectric projects participate in the FERC dam safety program. EWEB's participation is managed by Generation Engineering.

Because all of our hydroelectric facilities also use and store oil in close proximity to the McKenzie River, Generation also participates in the U.S. Environmental Protection Agency's (EPA's) spill prevention, control and countermeasures (SPCC) program, which provides the basis for emergency spill preparation and response. Generation's SPCC Plans are developed by EWEB's Environmental Management Division and committed to by EWEB's Generation Manager. Finally, in coordination with EWEB's Drinking Water Protection Program, Generation participates in the McKenzie Watershed Emergency Response System (MWERS), which provides additional context and coordination capabilities with upriver emergency providers/responders.

Mutual Aid:

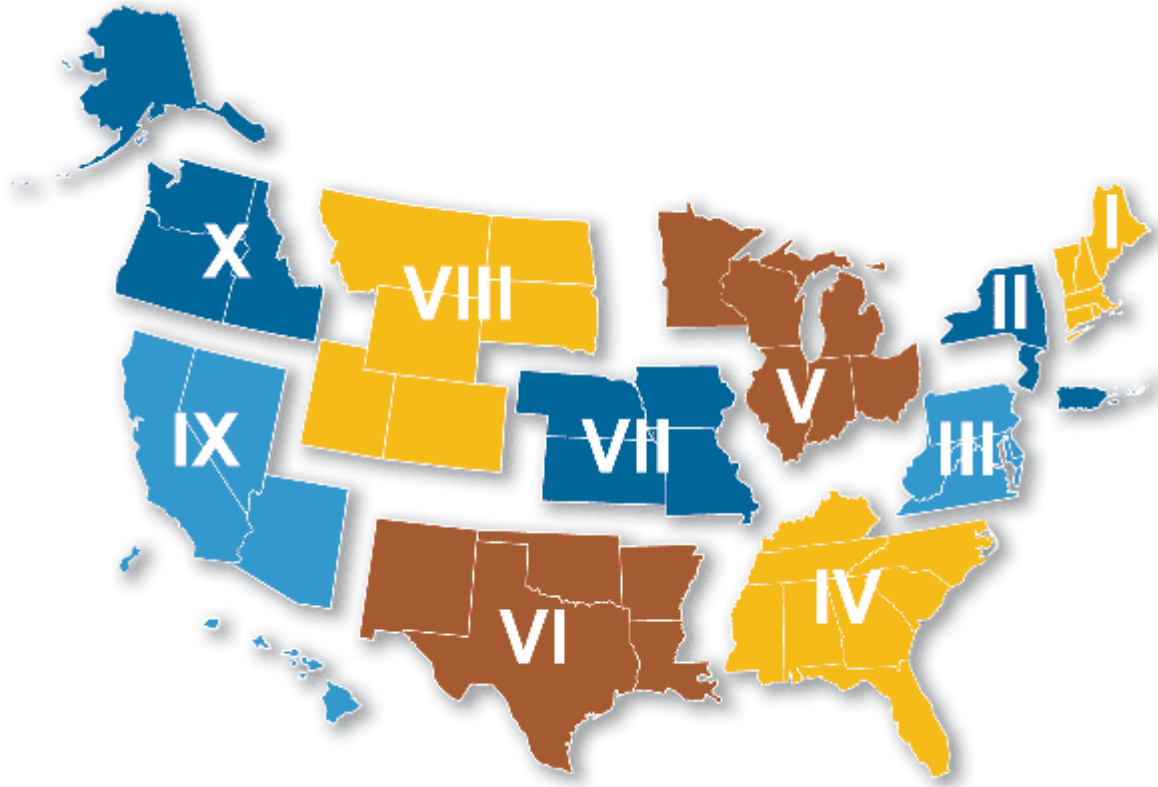
The Electric Utility has signed two mutual aid agreements designed to respond to utilities in need and to receive aid should an incident at EWEB require additional resources. In both cases there are no requirements to respond. Staff looks at current system loads and configuration, labor and equipment resources, weather forecasts, and current workload before deciding to send aid. The Incident Commander consults with the Incident Management Team along with the ICS General Staff to determine resource needs when considering asking for mutual aid from other utilities.

Western RMAG



Twelve years ago, EWEB signed the Western Region Mutual Assistance Agreement. It was created as an effort for gas and electric utilities throughout Western North America to support one another in the event of an emergency affecting generation, transmission, distribution and/or services. Parties involved in the WRMAA convene each year to share best practices, discuss key emergency response issues, review the agreement itself and name the annual custodian. In April 2015 the WRMAA officially created the Western Regional Mutual Assistance Group to coordinate mutual aid across the country with the six other RMAGs. The agreement is transferable to the other RMAGs. We utilized this agreement when responding to New Jersey to help the restoration efforts following hurricane Sandy.

APPA MAWG



EWEB has also signed the Mutual Aid Agreement with the American Public Power Association and is a working member of the Mutual Aid Working Group. Our Electric Operations Manager is a Region 10 Network Coordinator for the MAWG. This agreement is with most of the public power agencies across the United States and includes eighteen municipal and public utility districts in Oregon. Our local utility partners are part of this agreement.

Recommendation

This material was presented for information purposes and no action is needed at this time.

Please contact Todd Simmons at 541 685-7373 or todd.simmons@eweb.org if more information is needed or if you have any questions or comments.