NIST Community Resilience:
Energy Committee

MEETING DATE: April 4, 2016
TIME: 1:00 p.m. – 4:30 p.m. PDT
LOCATION: Portland, OR
ISSUE DATE: April 28, 2016

ATTENDEES:

Attendee	Organization Name
Ronda Mosley (Chair)	PTI
Julia Phillips (Vice-Chair)	Argonne National Laboratory
Stephanie Hamilton (Secretary)	Brookhaven National Lab
Steve Cauffman	NIST
Sarah Gambill	DHS
Erich Gunther	EnerNex
Chuck Hookham	CMS Energy
Bryan Hubbard	Independent Contractor/Consultant
Leon Kempner	Bonneville Power Administration
Stuart McCafferty	Hitachi Microgrids
David Michel	CA Energy Commission
Anne O'Neill	Portland NET Leader
Becky Rush	Derp Technologies
Russ Salter	ERTIC
E. Scott Tezak	TRC Solutions
Vipin Unnikaishnan	Colorado State University
Yumei Wang	State of Oregon

DISTRIBUTION: Attendees and Energy Standing Committee
NOTES BY: Stuart McCafferty, Hitachi Microgrids, and Ronda Mosley, PTI

1. Welcome

Ronda Mosley (Chair) opened the meeting with an introduction of our guest speakers, Yumei Wang from the State of Oregon and David Michel from the State of California.

2. Presentation by Yumei Wang, DOGAMI Geohazards Engineer, Oregon Dept. of Geology and Mineral Industries

Yumei's presentation discussed a number of issues. First, she discussed general energy issues, such as minimal redundancy and interdependencies. She stated that public utilities are willing to accept the risk of

low frequency, high consequence events. She also noted that making rate cases continue to be a barrier in making changes.

Yumei then discussed issues specific to the liquid fuel supply chain. She stated that Northern Oregon will be cut off from fuel supply in a large geohazard. Moreover, all of Oregon's liquid fuel facilities are built on liquefaction areas. Many products come from the Seattle area. Yumei also mentioned that right-of-ways cross a number of rivers where infrastructure is degraded. She stated that the infrastructure for liquid fuel supply is the worst energy infrastructure in the state. For more information, Yumei referred participants to the report "Earthquake Risk Study for Oregon's Critical Infrastructure Hub."

According to Yumei, challenges specific to the electrical grid include the fact that existing facilities were not built to be resilient to large magnitude earthquakes. Transmission towers could also fail in landslides. She noted that, though the infrastructure has significant vulnerabilities, the electric grid is the best energy infrastructure in northern Oregon.

Specific to natural gas, Yumei stated that lines have several river crossings and are built in zones vulnerable to liquefaction. As a result, natural gas infrastructure systems would have very long downtimes following disaster events. She stated that the natural gas infrastructure is the second worst energy infrastructure in the state.

Yumei suggested potential solutions to overcome the energy challenges. Public-private partnerships need to have geographic diversity to support the energy infrastructure. Moreover, no more unfunded mandates should be given to local communities. Through her own experiences, Yumei observed that starting at the state level and supporting local communities is a good model for community resilience awareness and common approaches within the state boundaries.

3. Identification of committee participants

Ronda led introductions of attendees.

4. **Presentation by Dave Michel, California Energy Commission, CaLEAP Program**

A second presentation, provided by Dave Michel, provided an overview of the CaLEAP Program. Dave first discussed the founding principles of the program. That is, the program was initiated as a voluntary program for local governments with a goal to increase energy resiliency. It was structured such that the focus would be on effects/consequences rather than the cause of failures, and would encourage comprehensive planning.

One main objective of the CaLEAP program was to prepare energy assurance plans and incorporate them into other planning efforts. It was also envisioned that new and evolving technologies would be presented. Dave noted that the bottom-up approach has led to policy changes at the state level. This program has also increased community awareness of their resilience and resulted in public private partnerships.

Some major tasks undertaken by CaLEAP include: developing a planning methodology, web-planning tool (state decided to not fund education and maintenance of the tool), and providing technical support.

The program focuses on developing fuel plans, identifying community profiles, energy profiles, and the applicable hazards to protect critical energy infrastructure.

Dave also discussed a number of strategies for use by communities when facing disasters, including evacuation, shelter-in-place, and determining the community drive priorities.

5. Group Discussion

After completing both presentations, the committee began an open discussion:

Q: How do we develop plans, checklists, and tools for energy?
A: Some suggested the committee could build on the work that CaLEAP had done.

Q: What are some lessons learned?
A: Participants had a variety of thoughts on the lessons learned from their experiences in past events.

Some felt that there was a need for realistic load profiles under stress conditions. They also identified standardized connectors as a need for the sector.

Participants also felt activities (e.g., exercising procedures with all stakeholders and testing equipment regularly) are important to prepare everyone for when a disaster does occur.

It is also important to understand locational information for assets in planning.

The group also discussed label panels and equipment. Standardized equipment, especially where limited maintenance capabilities (generators, etc.) exist, are also needed. Fuel depots with prioritized usage could also be used in communities. Participants felt that creating partnerships with other regional entities (e.g. common methodologies between close communities) could be used to leverage assistance from state and federal and outside support.

The committee discussed energy guides that are already available. Participants felt the committee could support the NIST Energy Fellows in developing a set of energy short briefs for resiliency/energy assurance. It also felt fuel management, energy assessments, and energy situational awareness are among the other areas where they can develop guidance for communities.

To move forward, Julia offered to provide Ronda with a document that provides a methodology on how to quantify resilience via an index for distribution to the group. The group decided not to create working groups since the committee is already small enough. Participants agreed that possible products of the committee could include checklists. They discussed focusing on the 6 steps in the NIST Community Resilience Planning Guide to identify where energy fits in and what products are needed to facilitate implementation.

6. Next Panel Meeting

The next committee meeting will be scheduled in late May.

7. Schedule

The next two Panel meetings (Fall 2016 and Spring 2017) are anticipated to take place in Denver, Colorado and at the University of Miami in Coral Gables, Florida.

8. Adjournment

There was no other business and the meeting adjourned at approximately 4:30 PM PDT.