

# All Wet in the Kennebec Watershed

An Energy Assurance Tabletop Exercise

September 14, 2010

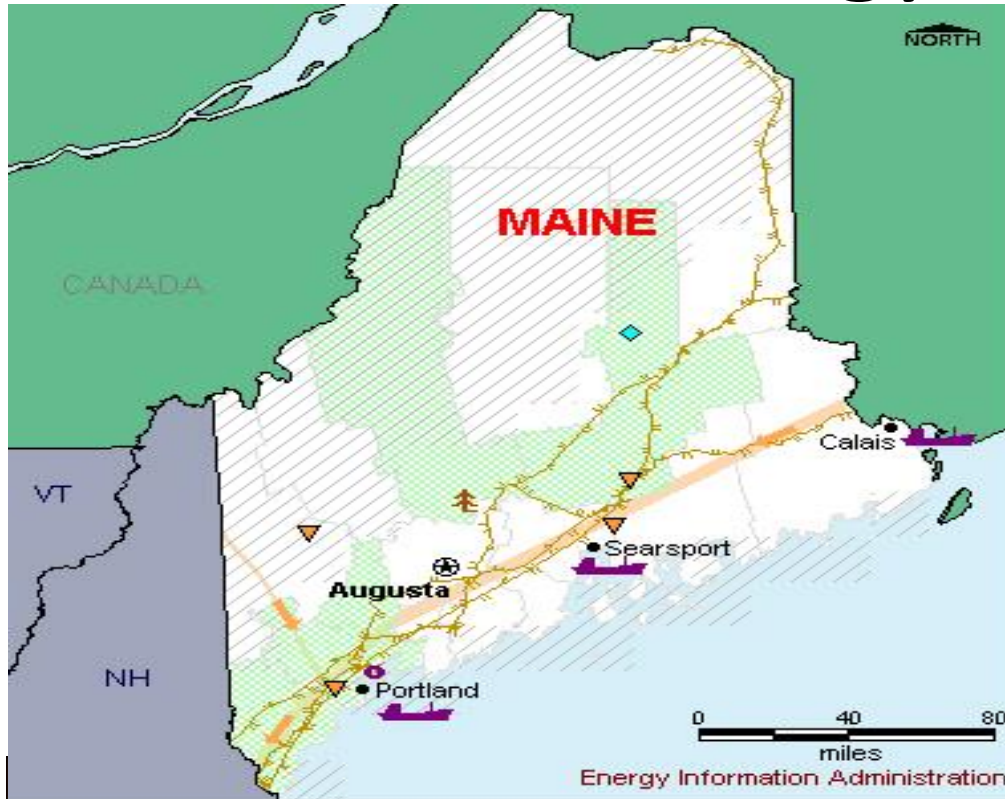


**Do not distribute without permission**



NARUC

# Maine Energy Profile



<ul style="list-style-type: none"> <li>■ Coal Mine, Surface</li> <li>▣ Coal Mine, Underground</li> <li>★ Natural Gas Hub</li> <li>■ Petroleum Refinery</li> <li>◆ Oil Import Site</li> <li>⚓ Oil Seaport</li> <li>— Electricity Transmission Line (&gt;= 345 kV)</li> <li>— Natural Gas Flow (1 mile band width = 100 million cubic feet/day)</li> <li>▨ Oil and Gas Active Leases</li> </ul>	<p><b>Major Electric Power Plants (&gt;= 100 MW)</b></p> <ul style="list-style-type: none"> <li>▲ Coal</li> <li>○ Geothermal</li> <li>◆ Hydroelectric</li> <li>▼ Natural Gas</li> <li>⊕ Nuclear</li> <li>⊕ Petroleum</li> <li>☀ Solar</li> <li>✕ Wind</li> <li>🌳 Wood</li> <li>● Other Renewable</li> </ul>	<p><b>Renewable Energy Potential</b></p> <ul style="list-style-type: none"> <li>▨ Biomass (&gt;= 50 tons/sq km/yr)</li> <li>▨ Geothermal (&gt;= 80 milliwatts/m<sup>2</sup>)</li> <li>▨ Solar (&gt;= 6.0 kWh/m<sup>2</sup>/day)</li> <li>▨ Wind (&gt;= 3 Power Class)</li> </ul>
---	---	--

## Maine Quick Facts

+The Port of Portland receives crude oil shipments, which it then sends via pipeline to refineries in Quebec and Ontario.

+About three-quarters of Maine's households – the highest share in the Nation – use fuel oil for home heating.

+Maine generates a larger share of its electricity from nonhydroelectric renewable resources than any other State.

+Maine is the only New England State in which industry is the leading energy-consuming sector.

+Maine has the highest wood and wood waste power generation capacity in the United States.



NARUC

# Background: Weather

- Extreme winter temperatures
- Record snowfalls
- 1 foot snow pack in Augusta and surrounding area. 6 foot snow pack in mountains





**NARUC**

# Cold Snap and Propane Supply

- Persistent cold weather and heavy snow have increased propane demand for home heating.
- High costs and delivery problems have had impact on propane supply.
- “Just-in-time” deliveries and partial deliveries = customers in constant need



**NARUC**

# Background: Infrastructure

- Recent seismic activity – description of earthquake
- Weakened dam on the Kennebec River near Augusta (??) – which one is closest?
- Insert picture of dam



# Plans for Energy Emergencies

- Governor's Office of Energy Independence and Security (OEIS)
- Public Utilities Commission (PUC)
- Maine Emergency Management Agency (MEMA)
- County Emergency Management Agencies (EMAs)
- Energy sector infrastructure owners/operators

NARUC



**NARUC**

# Warming Trend

- Change in weather approaching
- Expecting rapid warm-up and heavy soaking rains and high winds for several days
- Insert NWS alert in slide deck.



**NARUC**

# Power Out

- Map of outages
- How many customers are affected?
- What are the interdependent sectors that will be affected? How will the COP tool account for this?
- How many rely on propane for heat?



**NARUC**

# Rising Waters

- Kennebec rising close to flood stage
- What buildings are threatened? Utility services?
- What are the key bridges that will be on alert for the rising water?



NARUC

# Kennebec Dam Fails

- Melting snowpack and heavy rains break vital dam on Kennebec. Several bridges are threatened.
- What is the immediate damage? What are the CIKR sites close to the river?
- Which bridges does this impact?
- Do utility crews/first responder crews get stuck in the flood?



**NARUC**

# Boil Water Order

***DO NOT DRINK THE WATER UNLESS IT HAS BEEN BOILED!!!!***

**E. Coli bacteria were found in the water supply of Your Water System, PWSID ME99999 during the compliance period September 1 to September 30, 2010.**

**What should you do? USE BOTTLED WATER OR BOIL THE WATER FOR FIVE (5) MINUTES BEFORE USING IT. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, food preparation, or in any other activity involving consumption of water until further notice.**

**Possible Health Effects: *Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.* People at increased risk should seek advice about drinking water in general from their health care providers.**

**Steps This Water System is taking to correct the problem: Shock-chlorinating our well for a 24-hour period, then retesting the water to ensure it is suitable for use. We will inform you when additional samples show no coliform bacteria and you may drink the water. We anticipate resolving the problem within 3 days. For more information, please contact P.W. Sysop of Your Water System at 207-555-4321 or 98 76th St, Mainetown.**

**Date Notice Posted: September 14, 2010**



# Rationing Propane Deliveries

- Prolonged shortage results in rationing for customers.

**NARUC**



**NARUC**

# SCENARIO

- YOU ARE IN THE STATE EMERGENCY OPERATIONS CENTER
- MEMA HAS ACTIVATED THE EMERGENCY RESPONSE TEAM, AND BECAUSE OF THE SERIOUS NATURE OF THE WEATHER HAS REQUESTED THAT OTHER SUPPORT ELEMENTS FROM THE PRIVATE AND PUBLIC SECTORS ASSIST AT THE EOC
- THE MEMA DIRECTOR IS NOW COORDINATING EMERGENCY RESPONSE
- THE GOVERNOR IS ON HIS WAY AND WANTS TO BE BRIEFED WHEN HE ARRIVES



**NARUC**

SEVERE THUNDERSTORM WARNING - EXERCISE  
BULLETIN - EAS ACTIVATION REQUESTED  
SEVERE THUNDERSTORM WARNING  
NATIONAL WEATHER SERVICE GRAY ME  
145 AM EDT TUES SEP 14 2010

THE NATIONAL WEATHER SERVICE IN GRAY MAINE HAS ISSUED A  
SEVERE THUNDERSTORM WARNING FOR...  
WESTERN WALDO COUNTY IN SOUTH CENTRAL MAINE...  
SOUTHERN KENNEBEC COUNTY IN SOUTH CENTRAL MAINE...  
NORTHERN SAGADAHOC COUNTY IN SOUTH CENTRAL MAINE...  
NORTHERN KNOX COUNTY IN SOUTH CENTRAL MAINE...  
EASTERN ANDROSCOGGIN COUNTY in SOUTH EASTERN MAINE  
UNTIL 1000 PM EDT

AT 122 AM EDT...NATIONAL WEATHER SERVICE DOPPLER RADAR  
INDICATED A SEVERE THUNDERSTORM CAPABLE OF PRODUCING  
HEAVY AND SEVERE RAIN AND WARMER TEMPERATURES UP TO 70  
DEGREES. THIS STORM WAS LOCATED 9 MILES SOUTHWEST OF  
LEWISTON...AND MOVING EAST AT 25 MPH.

SNOWPACK IN SURROUNDING AREAS WILL COMBINE WITH RAIN TO  
CAUSE MAJOR FLOODING IN KENNEBEC AND SURROUNDING  
COUNTIES

PRECAUTIONARY/PREPAREDNESS ACTIONS...



NARUC

# The Sky Falls

- Vital bridges and several major roads impassable
- Travel is difficult for responder and restoration crews and fuels deliveries
- Extremely high flows on the Kennebec wash against bridge abutments along its entire length
- Hallowell, Gardiner, and Augusta streets are flooded to levels similar to 4/1/87
- Heavy rain and wind continues



**NARUC**

# AWSM news report

- Report of damage from the storm



NARUC

# The Earth Moves

- Inland Fisheries & Wildlife rangers at Swan Island State Park report “a most wicked” earthquake just occurred there, with “some of the older buildings and lots of old trees down”
- The Weston Observatory reports a major temblor has occurred with an epicenter near 44°03’N 69°52’W
- A trucking company dispatcher calls a DOT contact to report that one of his drivers reports that a “power tower” seems to be leaning near I-295 mile 33.5



**NARUC**

# We're Powerless!

- Heavy rain and winds worsen power outages
  - # Customers without power?
  - # Customers without heat?
  - # Customers without clean drinking water?
  - # Customers losing phone service?
- Restoration estimates needed!



NARUC

# Response Discussion

- What is the response from State agencies? Local agencies? Utilities?
- What public information is going out and where does the information originate and flow?
- What is the priority of restoring service to customers without propane?
- What involvement do State agencies have with the PUC at this point?
- At what point is the crisis over and when does the communication cease?



NARUC

# Testing the COP tool

- If we know where closures are, does this help the utility respond?
- Are communication lines established for proper response?
- How are you communicating information?
- What is the coordination with law enforcement?
- What priorities are there for sheltering, transportation routes, and public response?



NARUC

# Other information

- What do we need to do next?
- Questions / follow-up items to:
  - [Amy.Spelke@Maine.gov](mailto:Amy.Spelke@Maine.gov)
  - [Jeffrey.Marks@Maine.gov](mailto:Jeffrey.Marks@Maine.gov)
  - [Alana.J.Buck@Maine.gov](mailto:Alana.J.Buck@Maine.gov)
  - [JTaylor@NARUC.org](mailto:JTaylor@NARUC.org)
  - [Christopher.Kroot@Maine.gov](mailto:Christopher.Kroot@Maine.gov)
- THANKS!!
  - [JSukaskas@Maine.rr.com](mailto:JSukaskas@Maine.rr.com)