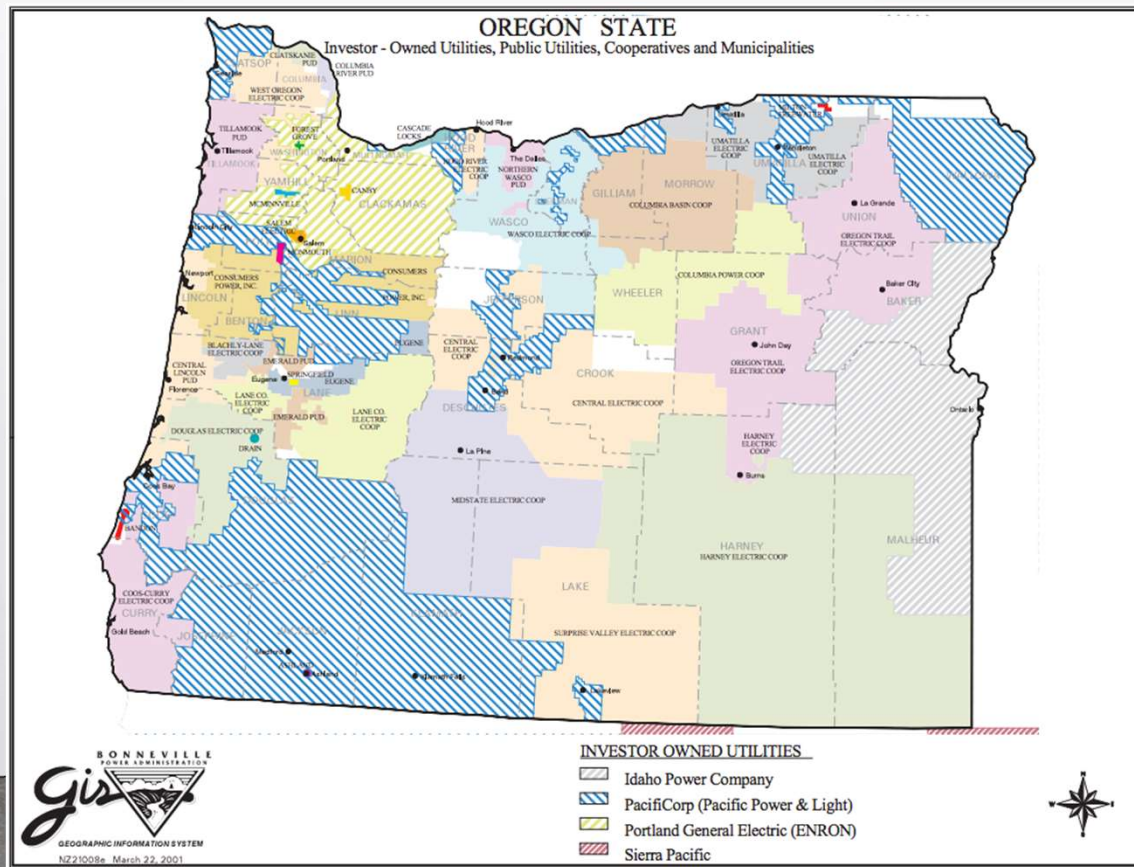




Central Lincoln

Resiliency & Reliability


Central Lincoln Service Territory in Oregon



Central Lincoln



- Formed in 1940
- Serving ~40,000 customers
- 120 miles of Oregon coastline
- 700 square miles
- 6 PUD's in Oregon
- Parts(s) of 4 Oregon Counties
- 4th largest Oregon electric utility
- 270 MW (winter) Peak Load
- 130 employees



Storm Hardening-Reliability

- Winter Storms
- 120MPH Winds
- Salt Fog –Tracking
- Redundancy: Substations, Transmission, Distribution
- System Hardened Substations



Northern Operations Center




A River Runs Through It...

- What's wrong with this picture?



SS139-Arcadia






Resiliency-Earthquakes

- Bolting down Substation Transformers
- Transformer Base Isolation
- Flexible Bus Conductors
- IEEE 693-2018 & IEEE 1527-2006
- Silicon Polymer vs Ceramic Insulators

Flexible Bus





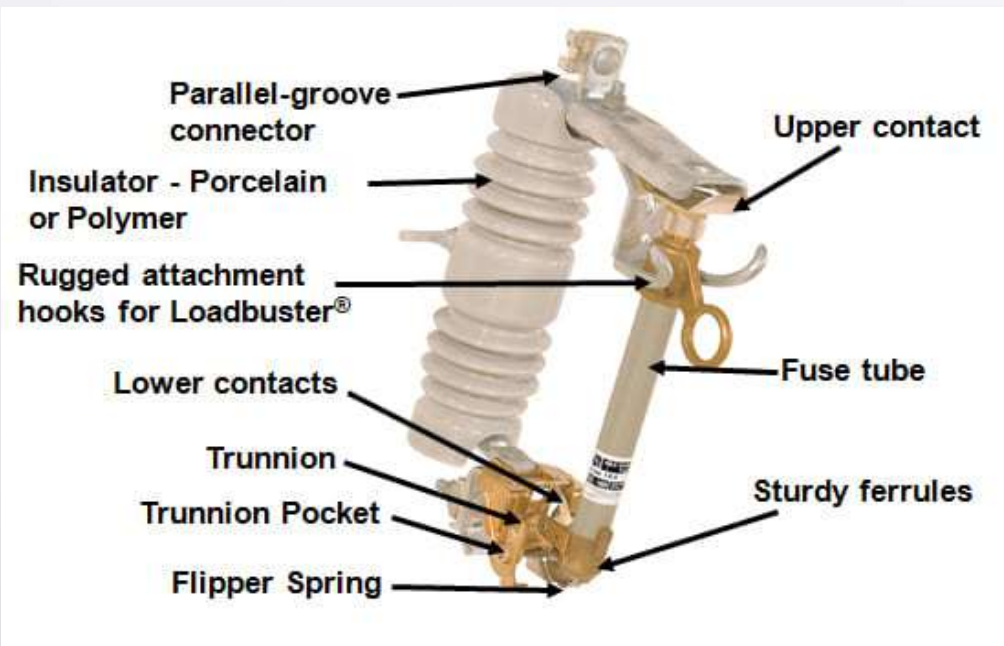


Resiliency –Wildfire preparedness

- #1 Vegetation Management Program
- Wild Fire Protection Relay Settings
- Ductile Iron-Steel Poles
- Vegetation Barrier-Substations + Communication Sites
- S&C Trip Saver 2's
- Expulsion vs. Non-Expulsion Fuse Cutouts

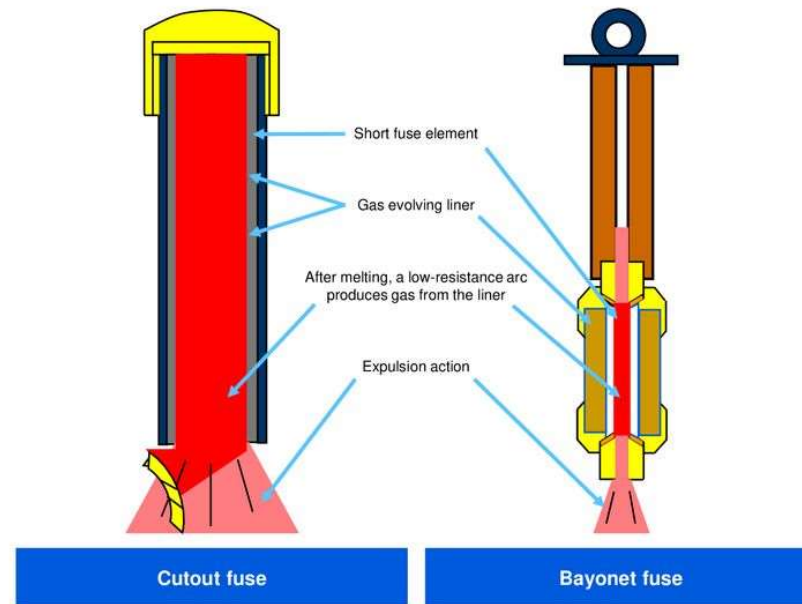


Expulsion vs. Non Expulsion



Current Limiting Fuses –E.L.F.

Current-limiting fuses Expulsion fuse operation



Seismic Sensors

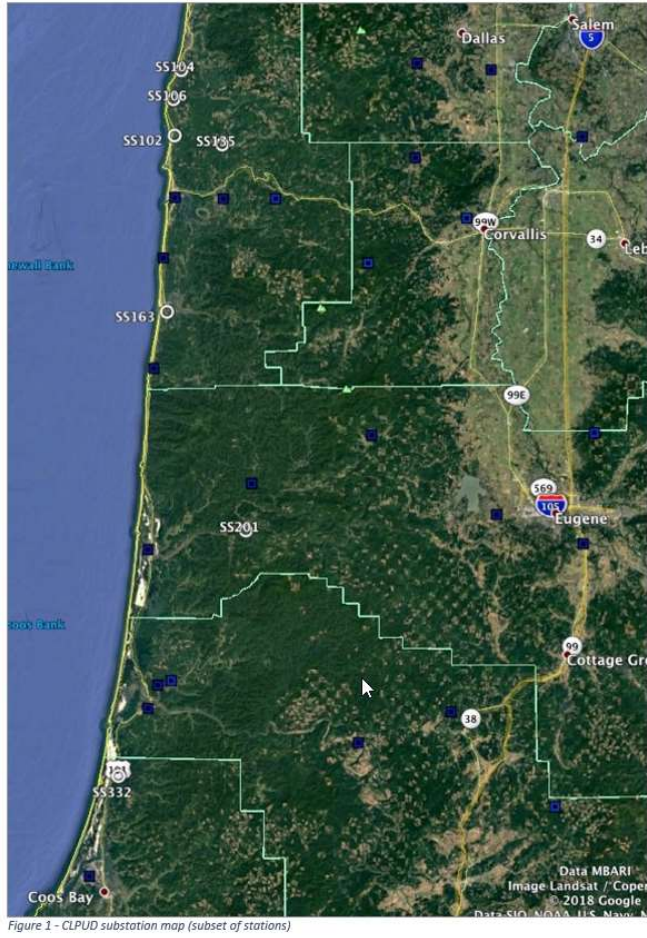
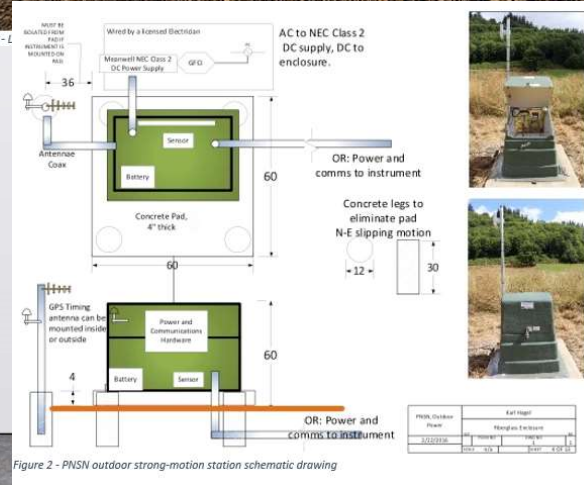
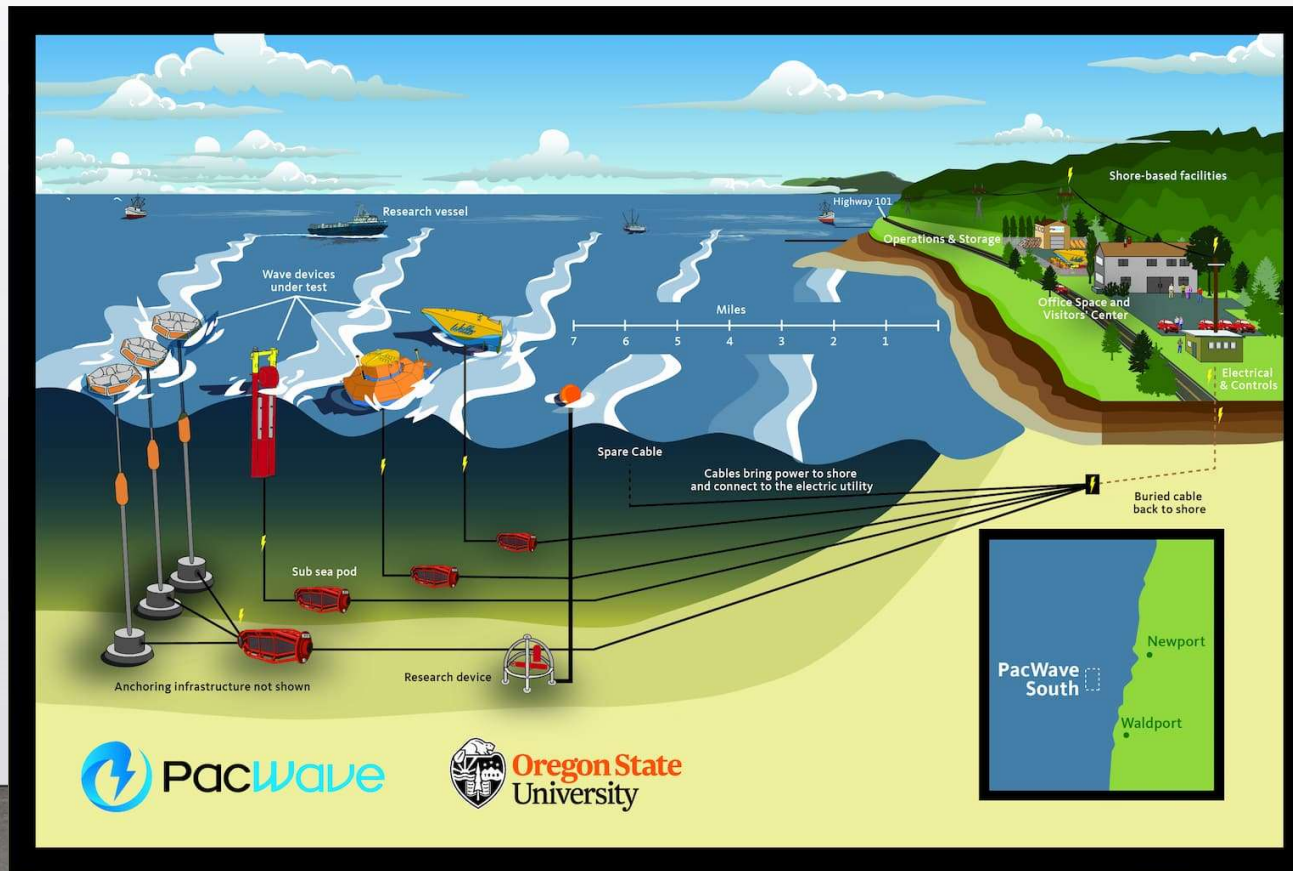


Figure 4 - L



PNSN Outdoor Station		East Sight	
Point	Height	Point	Height
100208	10.00	100209	10.00
100210	10.00	100211	10.00

Renewable Energy





THANK YOU

**CENTRAL
LINCOLN**
A COMMUNITY-OWNED ELECTRIC UTILITY

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