

# ~ BPA ~

## Developing, Testing and Maturing Capabilities

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Manager – Continuity of Operations and Emergency Management





Established in 1937

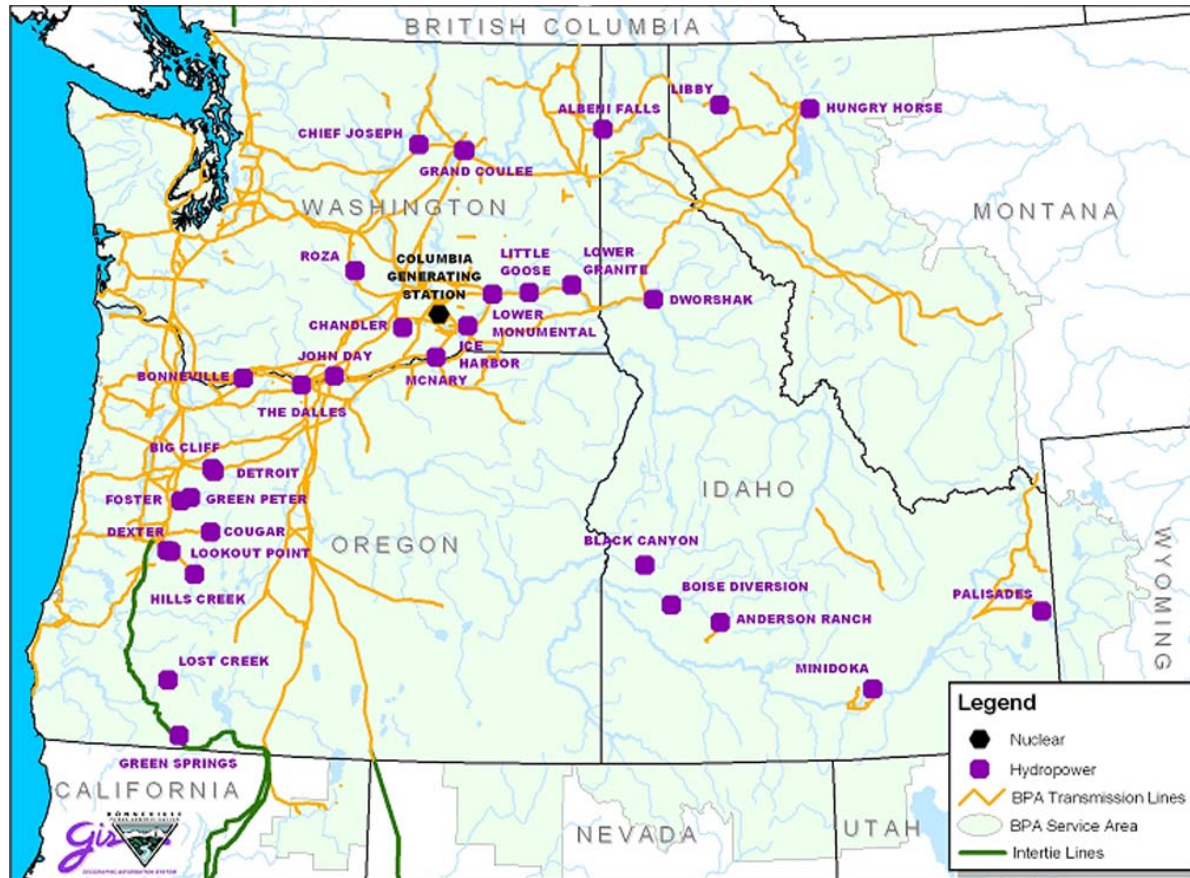
Federal Power Marketing  
Administration (PMA)

Part of the U.S.  
Department of Energy

Receives no  
federal appropriation  
(self-funded)



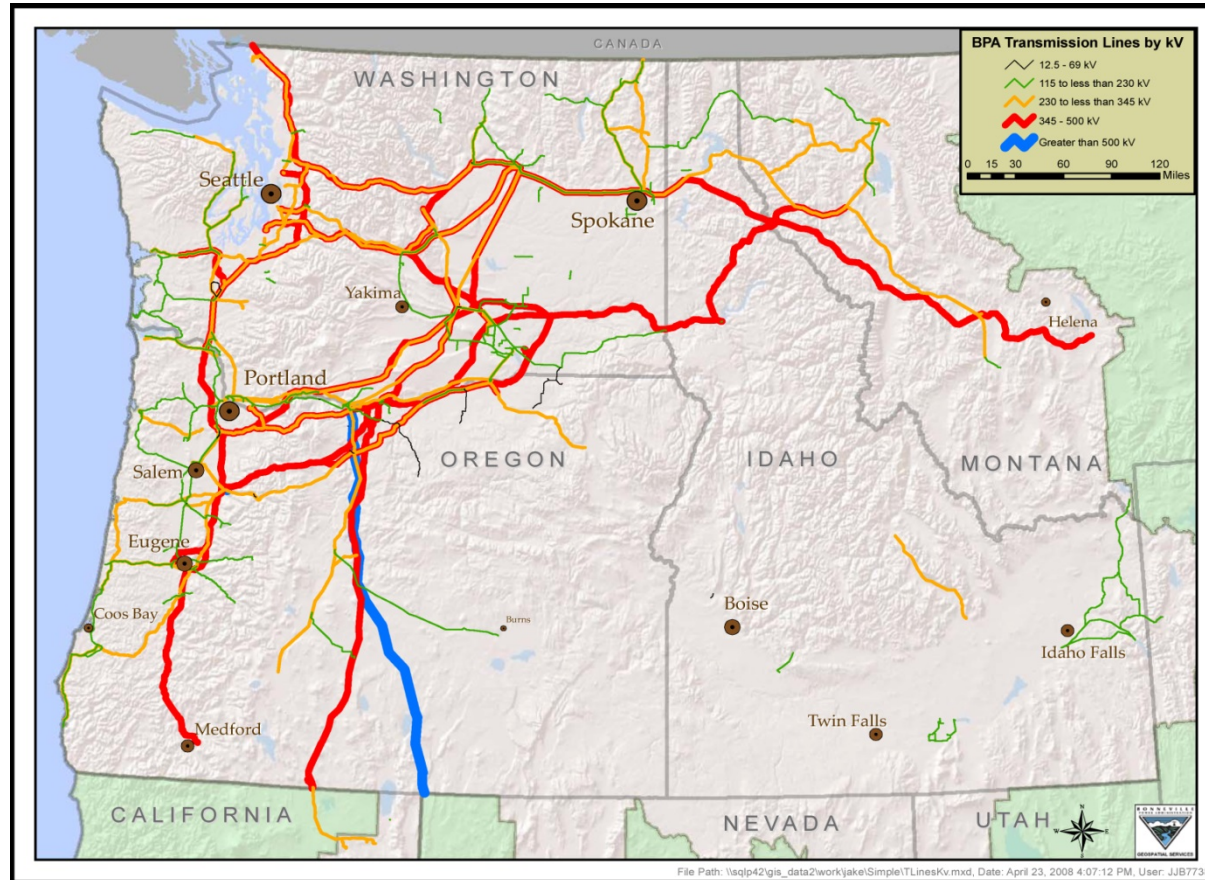
# Federal Columbia River Power System



- 31 Hydroelectric dams (21 USACE and 10 BOR) – 22,458 MW nameplate capacity
- 1 Nuclear Plant (Energy Northwest) - 1,120 aMW
- 142 Power customers (54 Co-ops, 42 Muni's, 28 PUDs, 7 fed agencies, 6 IOUs, 2 DSLs, 1 Port district, 2 tribal utilities)
- ~5,100 MW wind integrated into the Northwest Grid for delivery to market



# Transmission System



- 300,000 Sq Mile Service Territory
  - Oregon Washington, Idaho, Montana (sections of WY, NV, UT & CA)
- 15,000 circuit miles of High Voltage Transmission (75% of the NW grid)
- Over 285 substations
- 490 Transmission customers



# Energy Efficiency

- Since the early 1980s, BPA has acquired more than 1,800 aMW of savings
  - by energy efficiency programs (most executed through our utility customers)

## Residential



- Efficient lighting options
- Heat pump water heaters
- Weatherization
- Heating and cooling systems
- New construction (Energy Star)
- New technologies

## Commercial



- LED lighting
- Grocery refrigeration
- HVAC system incentives
- Commercial kitchen incentives
- New construction design

## Agricultural



- Irrigation water management
- Variable frequency drives
- Irrigation hardware upgrades
- Pump testing and analysis

# Environment, Fish & Wildlife

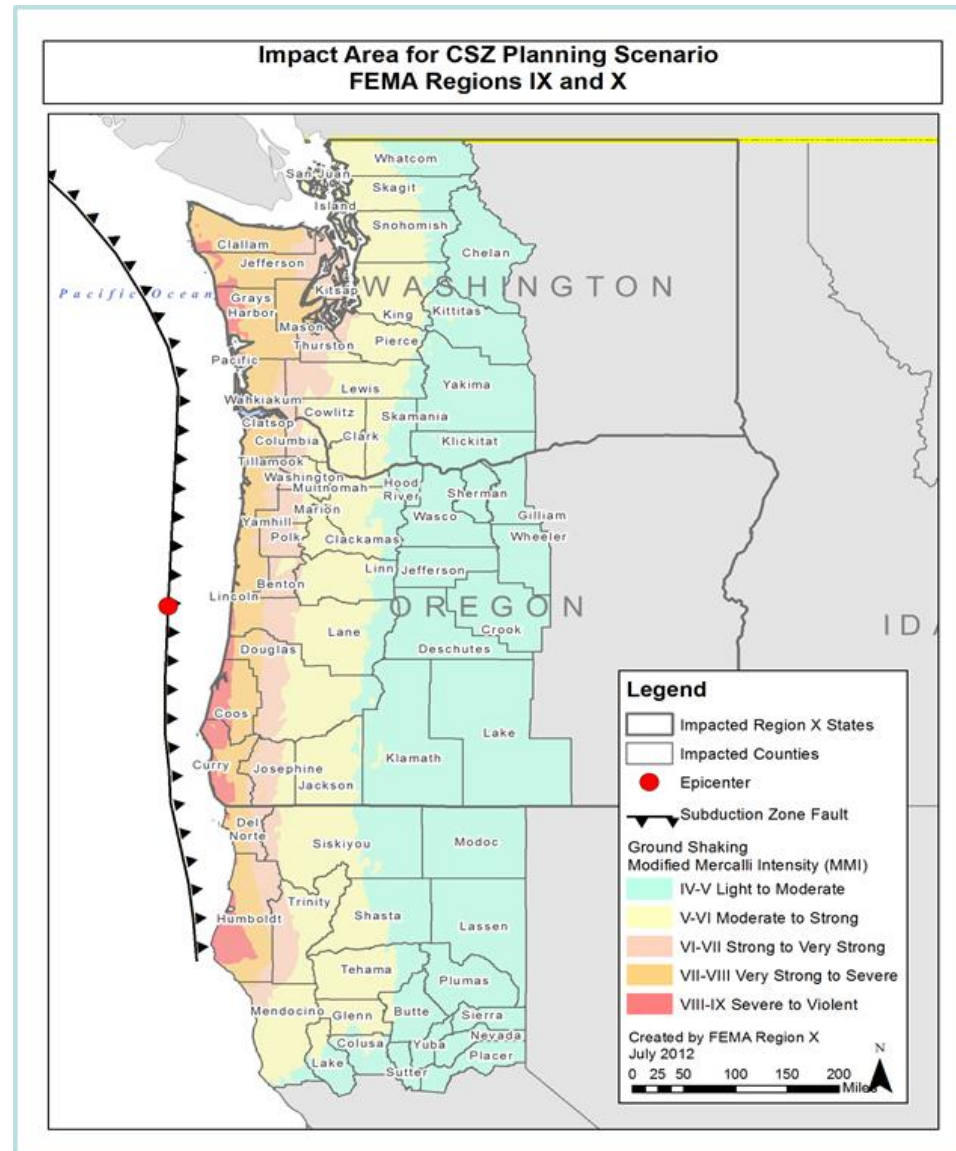


About \$750,000,000 per year

- Habitat restoration
- Improved fish passage
- Scientifically managed hatcheries
- Predator management
- Hydro operations for fish

Returns to Bonneville Dam in 2014-2015 were highest on record – well over a million fish

## Cascadia Subduction Zone Earthquake



# Preparedness

Employees and their families need to be ready for emergencies such as:

- Neighborhood power outage
- Winter storm
- Flooding
- Cascadia subduction zone earthquake

In all cases

– the sooner employees feel family and property are safe –  
the sooner they can return to work



# What are we doing?

- Brown bags, guest speakers, panel discussions
- Conduct presentations for employees throughout the region
  - Preparing Heroes – useful tips – family reunification – kits – plans – vital information – managing stress – medication – elderly – pets
- Employee subscription service called “GetReady”
  - Monthly tips – things employees can easily do to be ready
- On-line Continuity awareness training for all employees
- Emergency Notification System – (voluntary participation)
- Notify all employees each year, in writing, of their responsibilities in a disruptive incident

# System

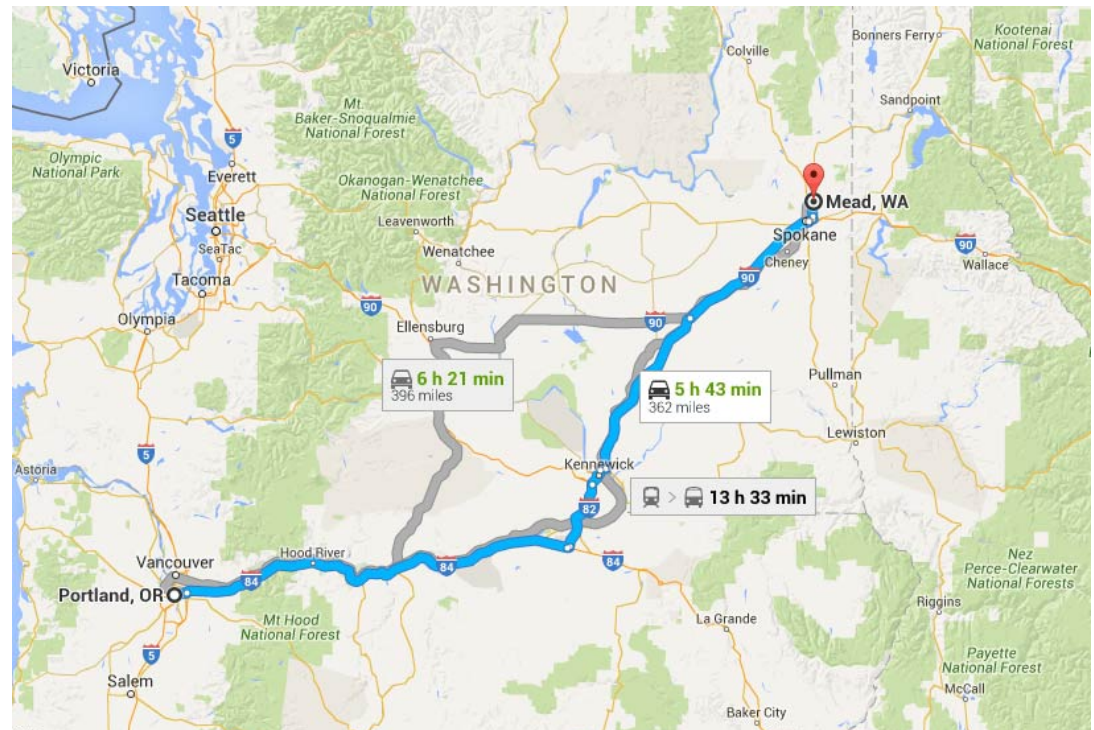
BPA has been strengthening and hardening the Northwest power grid for more than 20 years  
(Leon Kempner)

- Transformers west of the Cascades have been hardened
  - (anchored to concrete pads, rails or pedestals with steel plates)
- Conducting seismic studies on towers at river crossings
- Installed the first base-isolated transformer in North America



# Operations

- Have dedicated control facilities that are geographically separated (by about 300 miles)
- Some positions are staffed 24/7 at both locations
- All critical operational functions can be performed from either location



# Communications

- Multiple layers including:
  - Landline phone system – (issuing GETS cards)
  - Cell phones – many with Wireless Priority Service (WPS)
  - Proprietary telephone system connecting key operational sites
  - Microwave
  - Fiber Optic
  - High Frequency Radio
  - Field Radios
  - Satellite Phones



# Planning

- BPA follows the Federal Continuity Directives - 2008
- Mission Essential Function (MEF)
  - Deliver Power to Load in a Reliable Manner
- Single COOP plan for the agency
  - 15 annexes to the COOP (transportation, communication etc)
  - 82 Business Continuity Plans (so far)
    - Directly support our ability to perform the MEF
- Coordinated Continuity Plan (CCP)
  - Emergency river coordination with USACE and USBR

# ICS Training

- Top executives function as “Policy Group”
  - Convene any way possible
  - Assign Incident Commander (IC) if necessary
  - Delegate authority and define parameters
  - Set check-in periods
  - IC forms a team (IMT) and get to work
- Incident Management Team (IMT)
  - 8 Command and General Staff positions on a team
  - ~70 people currently at some point in training to learn positions
  - Striving for geographic distribution (east & west of the Cascades)
- New “ICS for Utilities” training developed for the NW
  - Utility specific
  - 2 day program
  - First class was held Oct. 27 & 28 at Concordia University

# Exercising

- Conducting over 150 exercises in FY16
  - 4 Incident Management Team (IMT) / Policy Group
  - 20 tests – (communication, notification, etc)
  - 42 Occupant Emergency Plans (OEP)
  - 79 Business Continuity Plans (BCP)
  - 6 Multi-agency – including Cascadia Rising in June 2016
    - Four FCRPS exercises to test river coordination
    - Clear Path IV
    - Cascadia Rising (June 7-10, 2016)

# Partnerships

- US Department of Energy
- FEMA
- Other Federal Power Marketers
- US Army Corps of Engineers
- US Bureau of Reclamation
- State Emergency Management Divisions
- Other Utilities
- Western Energy Institute (WEI)
- Northwest Public Power Association (NWPPA)
- Concordia University (ICS training for utilities)
- WRMAG – Mutual Assistance
  - energy utilities from 13 western states



Thank You

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Plant	Capacity (MW)	In-Service Date	Owner	Location
Black Canyon	10.2	1925	USBR	Payette River
Bonneville	1,195.20	1937	USACE	Columbia River
Grand Coulee	7,079.00	1949	USBR	Columbia River
Anderson Ranch	40	1950	USBR	Boise River
McNary	1,120.00	1952	USACE	Columbia River
Big Cliff	21	1953	USACE	Santiam River
Detroit	115	1953	USACE	Santiam River
Lookout Point	138	1953	USACE	Willamette River
Hungry Horse	428	1953	USBR	S. Fork Flathead River
Dexter	17	1954	USACE	Willamette River
Albeni Falls	49	1955	USACE	Pend Oreille River
Chandler	12	1956	USBR	Yakima River
Chief Joseph	2,614.00	1957	USACE	Columbia River
The Dalles	2,052.00	1957	USACE	Columbia River
Palisades	176.4	1958	USBR	Snake River
Roza	12.9	1958	USBR	Yakima River
Green Springs	17.3	1960	USBR	Keene/Emigrant Creek
Ice Harbor	693	1961	USACE	Snake River
Hills Creek	34	1962	USACE	Willamette River
Cougar	28	1963	USACE	McKenzie River
Foster	23	1967	USACE	Santiam River
Green Peter	92	1967	USACE	Santiam River
Lower Monumental	930	1969	USACE	Snake River
Little Goose	930	1970	USACE	Snake River
John Day	2,480.00	1971	USACE	Columbia River
Dworshak	465	1973	USACE	Clearwater River
Libby	605	1975	USACE	Kootenai River
Lower Granite	930	1975	USACE	Snake River
Lost Creek	56	1976	USACE	Rogue River
Minidoka	27.7	1995	USBR	Snake River
Boise Diversion	3	2004	USBR	Boise River