

# Owners' Dam Safety Program (ODSP) Lessons and Success Stories

FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF ENERGY PROJECTS  
DIVISION OF DAM SAFETY AND INSPECTIONS



# FERC Regulated Dams

- Over 2900 jurisdictional dams
- 800 High Hazard Potential Dams
- 200 Significant Hazard Potential Dams
- Heights from 0.5 feet to 770 feet



# Oroville Dam – 770'



Shoshone Diversion  
Idaho  
1.5' high  
Concrete Gravity



# Owners

- >150 dams
- 1 Dam
- Significant in-house expertise
- Little to no in-house expertise
- Municipalities, Irrigation Districts, Investor Owned Utilities, Mom and Pop's



# Review of Submittals

## ■ Initial

- Each Region reviewed a submittal from one of their larger licensees, one of their smaller licensees, a mid-sized licensee, a good ODSP, an average ODSP and a poor ODSP (determined after initial review of all submittals)
- Initial reviews were the subject of a meeting to assure all Regions had a similar level of review.



# Review of Submittals

## ■ Remainder

- Each Region has completed the first round of their reviews of all submittals
- In the Portland Region, there were 40 licensees who were required to have an ODSP
- To date, 30 ODSPs are complete and have been accepted.
- The other 10 have submitted plans but they need revisions or have asked for extensions.



# What FERC Hoped to See

- How Dam Safety is actually managed in the organization
- Owners taking ownership of their projects
- Owners gaining a better understanding of the risks they hold by owning dams



# What'd We Get?

- The Good
  - ODSPs that had a clear Dam Safety Policy
  - ODSPs that clearly showed the owners took ownership of their dam(s)
  - ODSPs that clearly spelled out what the licensee is doing to achieve the goals and objectives outlined in the policy statement.
  - ODSP does not read like a compliance document.



# What'd We Get?

- The Bad
  - ODSP's that had no clear Dam Safety Policy
  - ODSP's that stated certain activities or policies are in place when FERC inspections and meetings with license indicate that these activities or policies are not in place.
  - Reads like a compliance document. In essence using FERC and/or State guidelines as the principal part of the program.



# What'd We Get?

- The Ugly
  - ODSP's where the licensee seemed confused on the whole concept (not many of these)
  - Several small cities/counties fell into this category.
  - Special meetings were held between FERC, city/county elected officials and staff to educate them on the need for a good ODSP.



# Examples

## Dam Safety Policy Statement:

OWNER is committed to the safe operation and maintenance of its dams in order to protect the public and employees, the environment, and its hydroelectric facilities.



It is OWNER'S policy to ensure safe and reliable long-term operation of its system of dams by following these principles:

1. Safety is of first and foremost importance.

Employees actively identify and report to their supervisors any issues or concerns about the safety of hydroelectric dams and other appurtenant facilities.

Leaders positively recognize, assess, and respond to every report of a potential unsafe situation or issue.



## 2. Fostering a culture self-evaluation.

We monitor, assess and document dam performance.

We actively share knowledge and lessons learned throughout the hydroelectric system.

We implement mitigation measures to prevent dam failures.

We plan and prepare for emergency response and recovery,



3. Allocating sufficient resources to ensure hydroelectric facilities are safe
4. Ensuring power production and other business objectives do not take precedence over dam safety or regulatory compliance.



# Major Success Stories - PacifiCorp

- Owner of approximately 40 dams in the Pacific Northwest
- Three major dams on Lewis River including 400+ ft high Swift No. 1 and 300+ ft high Yale and Merwin Dams
- Very high consequence dams.





Merwin Dam



Swift No. 1 Dam

# Major Success Stories - PacifiCorp

- Historically a Somewhat Contentious relationship with FERC regional office
- FERC RO believed that staffing levels were insufficient
- Owner's Dam Safety Engineer stated that he often didn't have time to read documents prior to submitting them
- Owner was focused on compliance



# Major Success Stories - PacifiCorp

- Meeting with CEO and VP
- After, PacifiCorp reorganized, added dam safety staff including a new manager
- Owner's Dam Safety Engineer now has time to focus on primary job rather than all of the management responsibilities
- Large positive turnaround in dam safety program and corporate attitude



# Major Success Stories – Puget Sound Energy

- Owner of two major and one large dam on two reservoirs in Northern WA state
- Upper and Lower Baker Dams 300+ ft high
- High to very high consequence dams





Lower Baker Dam

# Major Success Stories – Puget Sound Energy

- Almost complete turnover in dam safety staff
- Owner's Dam Safety Engineer (ODSE) had no dam safety experience
- Dams have many on-going issues – Board of Consultants established



# Major Success Stories – Puget Sound Energy

- Prior to meeting with CEO and VP, PSE advertised for new OSDE.
- Meeting very productive
- New ODSP program and staff presented to FERC
- Large turnaround in dam safety program



# Major Changes Caused by Deaths

- In September 2010, no warning was issued prior to increasing flows at the Oswego River Project (P-2474) in New York at the Varick development (Varick).
- Two fisherman at the edge of the tailrace were swept by rising waters. One drowned and the other survived for several days before passing.
- Two other fishermen were clinging to warning sign poles.



# Major Changes Caused by Deaths

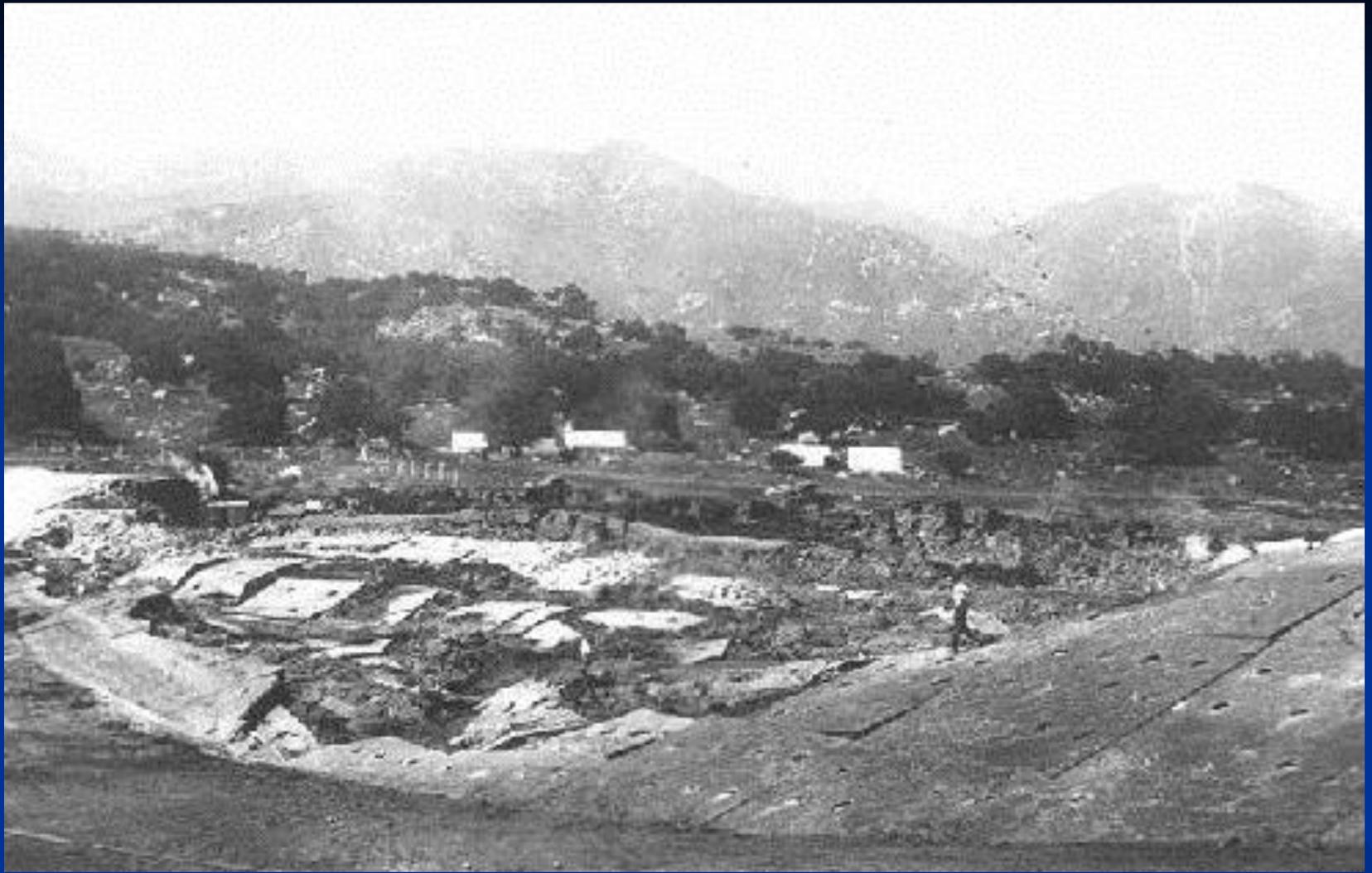
- In a January 15, 2014, settlement agreement, Erie agreed to pay a civil penalty of \$4,000,000.
- Erie and BPAM agreed to budget \$1,700,000 for public safety enhancements at their U.S. hydroelectric projects.
- BPAM also agreed to:
  - (1) purchase and implement a computerized compliance management program in its New York West Region at a projected cost of greater than \$500,000; and



# Major Changes Caused by Deaths

- (2) retain an independent qualified Board of Consultants (BOC) to perform a review of system operator staffing levels at the centralized remote operations currently in place at BPAM's National System Control Center (NSCC) for projects owned by Erie and BPAM in the United States, to make recommendations for any needed changes or improvements, and to submit such recommendations to the Commission's Director, Division of Dam Safety and Investigations (D2SI), for review and approval.





QUESTIONS?

