

# SWP Dam Safety Program

2018 Summary

January 16, 2019



# Existing Multi-Layered Approach to Dam Safety

- **Original Design and Construction Measures**
- **Dam Safety Surveillance and Monitoring Plan (DSSMP)**
- **Part 12D Safety Inspections / Director's Safety Review Board**
- **Emergency Action Plan & Exercises**
- **Routine Maintenance**
- **Capital Improvement projects**

# 2017 – 2018 Program Reviews

- Self Assessment with CEATI Dam Safety Program Maturity Matrix
- ISO 55001/ASDSO Peer Review
- Executive Visits to USBR and SoCal Edison
- Owner's Dam Safety Program Independent Review
- Independent Forensic Report

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## Dam Safety Program

ISO 55001/ASDSO Peer Review

Gap Assessment Report

BLACK & VEATCH PROJECT NO. 197568

PREPARED FOR

California Department of Water Resources



FEBRUARY 9, 2018

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# Areas of Enhancement

- **SWP Dam Safety Policy (WREM 16b)**
- **A Top-down leadership structure**
- **Training and interaction with dam safety organizations**
- **Cross-Divisional Dam Safety Teams**
- **SWP Dam Safety Program with the O&M Asset Management Program**
- **Culture of Continuous Improvement**



# Improvement Targets



# SWP Dam Safety Policy

- Public safety is the highest priority for the Department and the SWP
- Assigns responsibilities and accountability
- Establishes Program Elements
- Signed by Director on November 2, 2018



## State Water Project DAM SAFETY POLICY

The Department of Water Resources (Department) is committed to ensuring safety, minimizing risk, and protecting the environment in all of its endeavors. Public safety is the highest priority for the Department in its management and operation of the State Water Project (SWP), which includes its dams, and associated infrastructure. The Department maintains clear protocols among Department executives, employees, and SWP stakeholders for the identification, prioritization, management, and communication of any SWP dam safety risks.

SWP staff, managers, and business partners are responsible for implementing this policy and continually improving the SWP Dam Safety Program. SWP managers will maintain a culture that promotes the SWP dam safety principles. The Department's Directorate shall provide all necessary resources to implement this policy.

### Roles and Responsibilities of SWP Dam Safety Program Leaders

The SWP Dam Safety Program relies on commitment and engagement from all levels of the Department.

#### All Department Employees:

1. Are empowered and expected to refer known or perceived dam safety issues to the Chief Dam Safety Engineer for resolution.

#### The Assistant Deputy Director, State Water Project, is accountable for:

1. Establishing, communicating, and maintaining SWP policies pertaining to dam safety to emphasize the importance of public safety.
2. Ensuring that resources are properly aligned and sufficient to address public safety priorities for SWP dams and associated infrastructure, and successful execution of the SWP Dam Safety Program.
3. Communicating significant dam safety issues to the Deputy Director, State Water Project, and the Director.
4. Engaging the Chief Dam Safety Engineer, SWP Division Chiefs, Deputy Directors, and Directors on program performance.
5. Ensuring communication of SWP Dam Safety Program activities to all stakeholders.

#### The Chief Dam Safety Engineer is responsible for:

1. Administering, monitoring, and continuously improving the SWP Dam Safety Program. This includes maintaining the SWP Owner's Dam Safety Program (ODSP) document which defines roles, responsibilities, and SWP Dam Safety Program elements.
2. Prioritizing dam safety projects and activities in alignment with asset and risk management policies for SWP facilities.
3. Communicating significant dam safety issues and risk reduction measures in a timely manner to the Assistant Deputy Director, State Water Project, and the Deputy Director, State Water Project.
4. Communicating program activities to dam safety regulators.

#### SWP Division Chiefs support the SWP Dam Safety Program by:

1. Aligning resources to address program priorities as recommended by the Chief Dam Safety Engineer and approved by the Assistant Deputy Director, State Water Project.
2. Developing and implementing effective procedures, instructions, and standards within Divisions to fulfill the program elements.
3. Developing and implementing best practices in the design, construction, operation, and maintenance of SWP dams and their appurtenances.
4. Participating in the SWP Dam Safety Program Steering Committee.

### SWP Dam Safety Program Elements

These program elements shall be documented within the SWP ODSP document:

- **Surveillance** – Early detection, inspections, instrumentation monitoring, and testing with robust data collection and analyses.
- **Dam Safety Assessments** – Evaluate facility performance and design, considering modern standards and analysis methodologies. Perform comprehensive facility reviews.
- **Reservoir Operations** – Operate reservoirs to ensure public safety and protect downstream communities.
- **Maintenance** – Meet or exceed industry standards for maintenance of SWP dams and appurtenances.
- **Design and Construction** – Employ conservative design and construction practices in accordance with regulatory requirements and modern industry standards.
- **Risk Management** – Prioritize dam safety issues and align decision making with risk management policy.
- **Emergency Preparedness** – Maintain and exercise Emergency Action Plans and Security Plans; partner with emergency management agencies and communities.
- **Independent Reviews** – Conduct facility reviews by external dam safety experts through Part 17D Independent Consultants, Director's Safety Review Boards, and Boards of Consultants.
- **Project Delivery** – Effectively manage projects, execute studies, obtain environmental permits, and design and construct facilities.
- **Communication** – Communicate and report dam safety issues and program status to internal and external stakeholders.
- **Documentation** – Organize and secure program and facility documentation.
- **Technical Expertise** – Hire, train, and develop qualified staff through documented training programs and partnering with external experts.
- **Program Reviews** – Monitor program performance metrics and perform regular audits and formal management to promote continuous improvement.

[State Water Project Dam Safety Program/Programs/State-Water-Project](http://www.water.ca.gov/programs/state-water-project)

[The State Water Project Dam Safety Program/Programs/State-Water-Project](http://www.water.ca.gov/programs/state-water-project/dam-safety/program/program/Programs/State-Water-Project)



# SWP Dam Safety Program Elements

- **Surveillance**
- **Dam Safety Assessments**
- **Reservoir Operations**
- **Maintenance**
- **Design and Construction**
- **Risk Management**
- **Emergency Preparedness**
- **Independent Reviews**
- **Project Delivery**
- **Communication**
- **Documentation**
- **Technical Expertise**
- **Program Reviews**

# 2018 Program Progress

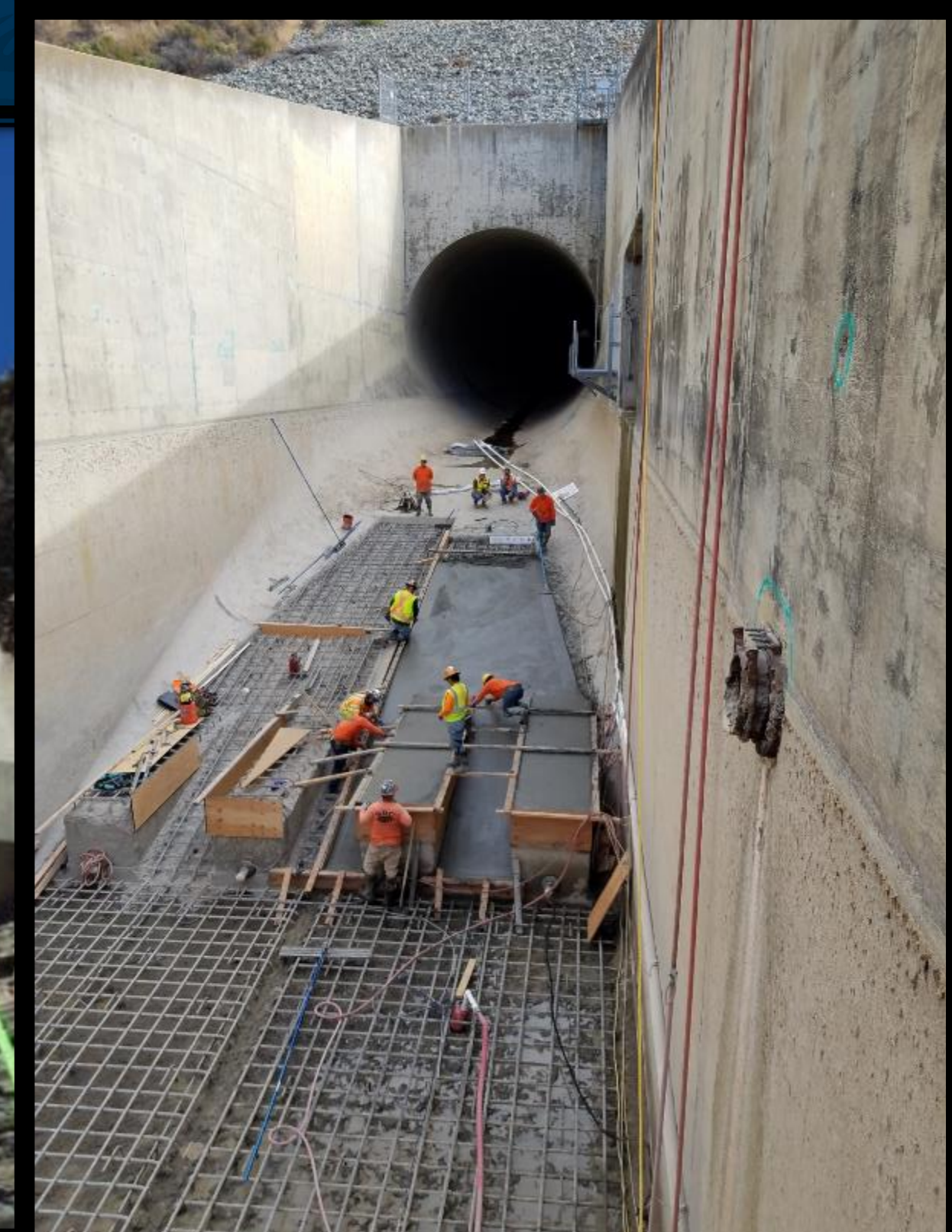
- Enhanced Executive-level Accountability for SWP dam safety.
- Elevated the SWP Chief Dam Safety Engineer (CDSE) position.
- Established the SWP Dam Safety Program Steering Committee
- Reorganization and Expansion of the O&M Dam Safety Branch
- Executed Training Contracts with ASCE and ASDSO
- Enhanced training plans for engineers
- Worked with CalHR to Improve Recruitment for Key Positions
- Increased participation with the Dam Safety Industry
- Increased use of external dam safety and engineering expertise
- Increased outreach to local agencies on EAPs/emergency preparedness



# 2018 Spillway Efforts

Completed Phase 1 Spillway Inspections and Condition Assessments and Maintenance Actions for:

- Pyramid Dam
- Castaic Dam
- Cedar Springs Dam
- Grizzly Valley Dam
- Frenchman Dam
- Antelope Dam
- Del Valle Dam



# 2019 Planned Efforts

- Oroville Facilities Potential Failure Mode Analysis/Level 2 Risk Assessment Workshops
- Oroville Dam Safety Comprehensive Needs Assessment (on-going)
- Phase 1B Spillway Inspections
- Phase 2 Spillway Invasive Investigations
- Inundation Mapping, EAP updates, and Exercises (on-going)
- SWP Dam Safety Program Initiatives
- Continued alignment of SWP Dam Safety Program with the O&M Asset Management Program Initiatives



Questions?