

2023 SWP Construction Project Updates

California Water Commission Briefing, October 18, 2023



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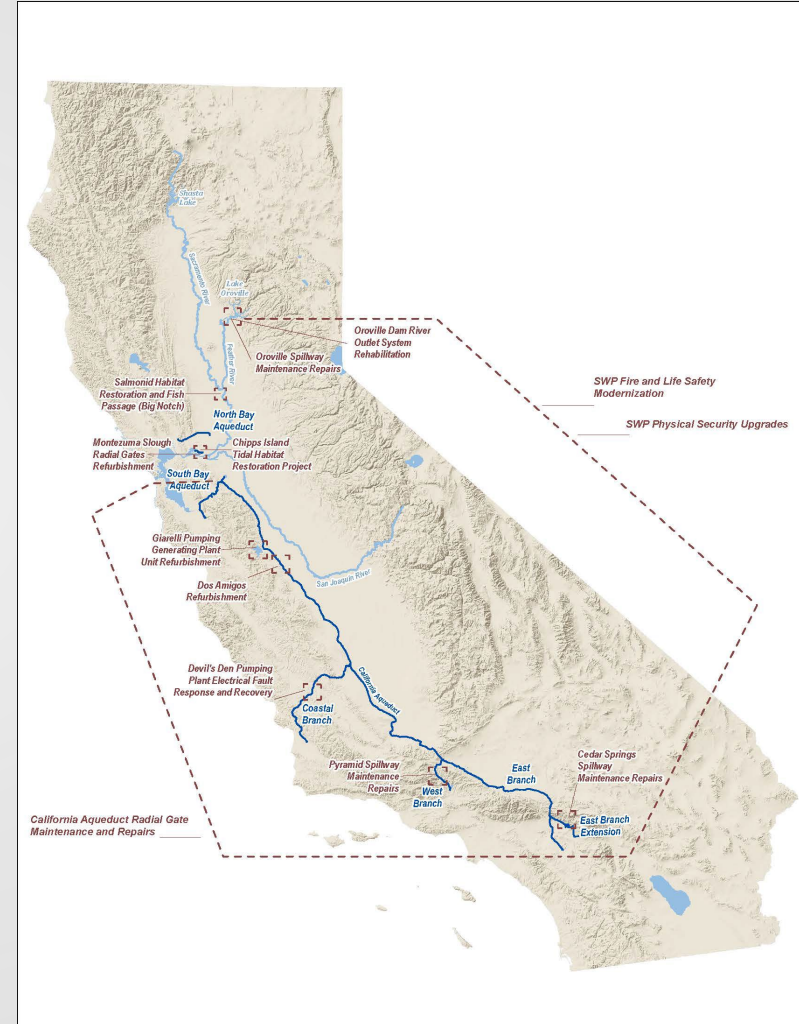
Division of Engineering (Acting Manager)



CALIFORNIA DEPARTMENT OF
WATER RESOURCES

Projects to be Discussed

- SWP Fire and Life Safety Modernization
- SWP Physical Security Upgrades
- Salmonid Habitat Restoration and Fish Passage (Big Notch)
- Oroville Spillway Maintenance Repairs
- Cedar Springs and Pyramid Spillway Maintenance Repairs
- California Aqueduct Radial Gate Maintenance and Repairs
- Montezuma Slough Radial Gates Refurbishment
- Oroville Dam River Valve Outlet System Rehabilitation
- Gianelli Pumping – Generating Plant Unit Refurbishment
- Dos Amigos Pumping Plant Unit Refurbishment
- Devils Den Pumping Plant Electrical Fault Response and Recovery
- Chipps Island Tidal Habitat Restoration Project



SWP Fire & Life Safety Modernization (cont.)

Project Status:

Oroville Field Division

- Fire & Life Safety Modernization Complete.
- Construction Contracts Closed Out.

San Luis Field Division

- Construction Contract awarded September 2023.
- Construction duration is estimated to be 4 years.

San Joaquin Field Division

- CMGC Contract Procurement is in progress with an RFQ release of November 2023.
 - Facilities: Buena Vista, Teerink, Chrisman, Edmonston, Lost Hills and SJ O&M Centers.
- CMGC Contract planned to be award February 2024.
- Design Team is continuing work towards 60% plans and specs.
- Construction planned to begin in 2026.



SWP Physical Security Upgrades

Project Status:

Oroville Field Division

- Upgrades installed at Oroville Dam, Hyatt, Thermalito Diversion Dam, O&M Center. Construction Contract Closed Out.

Central contract Phase I (Delta and San Luis Field Divisions)

- Contract awarded April 2023, completion end of 2024.
- Project upgrades at Banks PP, Bethany Dam, Dos Amigos PP, and O&M Center Entrances.

South contract Phase I (San Joaquin and Southern Field Divisions)

- Contract advertising winter of 2023, construction planned to early 2024 through 2025.
- Project upgrades at Chrisman PP, Edmonston PP, Oso PP, Pearblossom PP, and O&M Center Entrances.

SFD FERC Physical Security Upgrades

- Design anticipated to start in 2024 for upgrades at Warne PP, Pyramid Dam, Quail Lake Dam, Alamo PP, Cedar Springs Dam, Mojave PP, Devils Canyon Complex. Permitting in 2025, construction 2026-27.



Salmonid Habitat Restoration & Fish Passage (Big Notch)

Project implemented to create critical floodplain habitat for juvenile fish and improve a migration corridor for adult fish required by the SWP Biological Opinion and Incidental Take Permit.

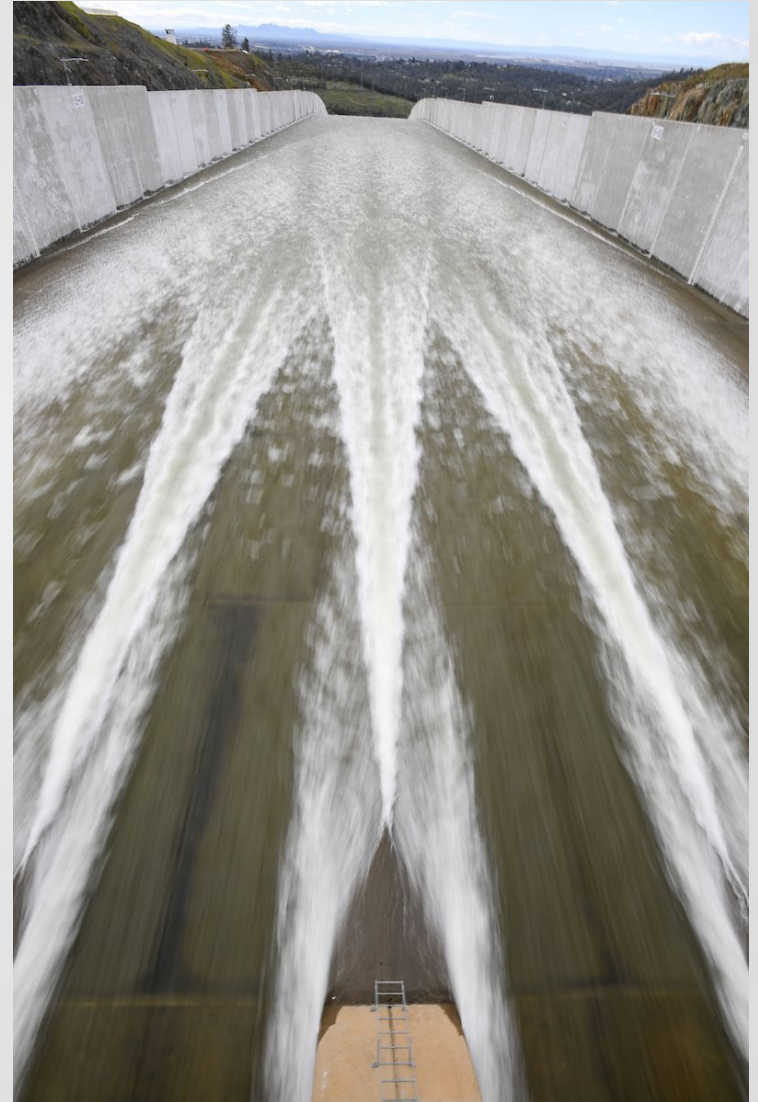
Project Status:

- Contract awarded May 2022
- Intake Channel mostly complete
- Headworks – Structural Concrete
- Transport Channel mostly complete
- Pedestrian Bridge – Structural Concrete
- Electrical / Communications
- Construction completion Summer 2024



Oroville Spillway Maintenance Repairs

- Annual inspections are conducted to identify maintenance needs.
- Significant spillway use in 2023 due to wet hydrology and River Valve Outlet System Rehabilitation project, which required periodic outages for Hyatt Pumping and Generating Plant.
- Over 2,370,000 acre-feet released in 2023 – roughly 67% of the reservoir’s capacity.
- Spillway releases peaked at 36,000 cfs; surveillance and instrumentation data confirmed satisfactory performance.
- Three-year contract advertised and awarded to address joint sealant, localized shallow concrete repairs, and to inspect the underdrain system.
- Concrete repairs total 500 square-feet, or 0.1% of the spillway’s surface.



Pyramid and Cedar Springs Spillway Maintenance Repairs

- Annual inspections are conducted to identify maintenance needs.
- Last major maintenance effort was conducted in late 2017.
- A single contract was advertised and awarded to address joint sealant and localized shallow concrete repairs at both spillways.



Cedar Springs Dam Spillway



Pyramid Dam's Spillway



California Aqueduct Radial Gate Maintenance and Repairs

Ongoing improvements to condition assessment, maintenance, refurbishment and replacements to the radial gates along the CAAQ.

Project Status:

- Contract awarded May 2021
- Four gates installed in calendar year 2022
- Three gates fabricated with two in process of being installed
- One gate in fabrication, final two gates to be fabricated in 2024
- Installation of the last 4 gates in 2024
- Construction completion, December 2025



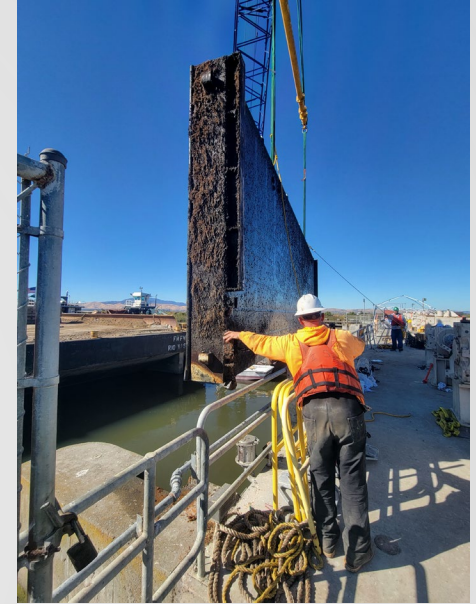
Montezuma Slough Radial Gates Refurbishment

Project Scope

- Refurbish all three gates at the Salinity Control Structure – Montezuma Slough
- Repair and recoat gate trunnions
- Fabricate stoplogs for bay isolation during gate outage
- Perform maintenance and repairs on gate hoists/gearboxes

Project Timeline

- All onsite work must occur between August-October of each year due to environmental permitting requirements
- Due to limitations from environmental regulators and DWR operations we can only have one gate out of service at a time
- Three stoplogs have been fabricated and are currently in service during gate outages
- Gate 3 has been refurbished and reinstalled
- Gate 1 is currently being refurbished at contractor's shop and will be installed in November 2023
- Gate 2 will be the final gate to be refurbished and is expected to be finished by November 2024
- Contract closeout to follow



Montezuma Slough Radial Gates Refurbishment

Bay Wall #2 Concrete Cracks

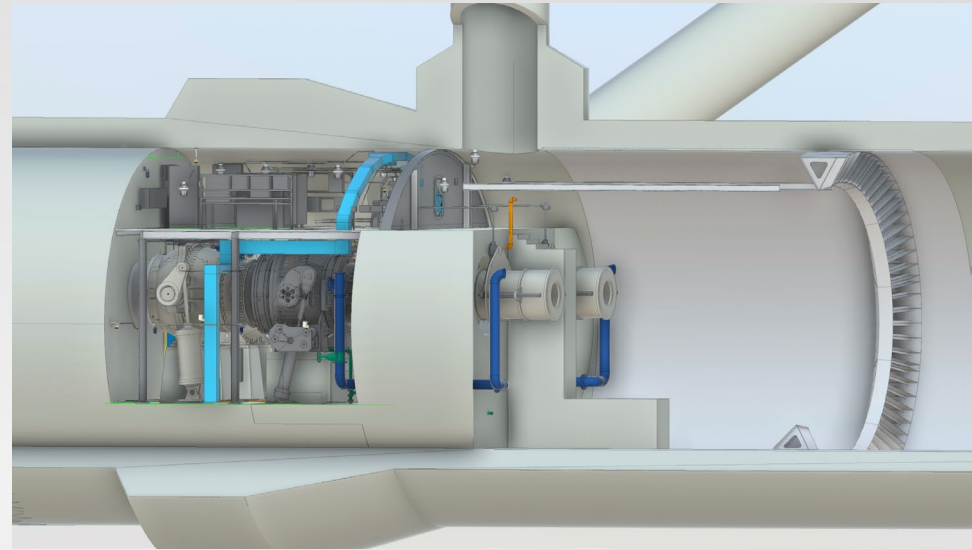
- In Spring of 2023, cracks were observed in Bay Wall #2
- These cracks were located below the trunnion and appeared to be deep
- These cracks were inspected by DOE Structures, SPH, and a Structural Consultant due to concerns that the trunnion tendons for Gate 1 and 2 may have been exposed to salt water which may compromise the tendons integrity
- July 31, 2023, deeper inspection of the tendons revealed that the tendons had not lost tension and showed no signs of damage.
- Concrete repairs are scheduled before Gate 1 is scheduled for installation on the week of November 13th, 2023



Oroville Dam River Valve Outlet System Rehabilitation

Project Status:

- **Phase 1:** Preparation work in RVOS & Tunnel 2
 - Install Bridge Crane to bring in materials/valves
 - Installation of Isolation Bulkhead to allow work while Hyatt Powerplant is operating / generating
- **Phase 2:** Installation of new spherical valves
 - Demolition & reconstruction of thrust block and pressure relief wall
 - Installation of new Spherical Valves
 - Remove and replace Fixed Cone Valves.
 - Installation of new hydraulic, electrical, ventilation, & seat water system.



Oroville Dam River Valve Outlet System Rehabilitation (Cont.)

Timeline:

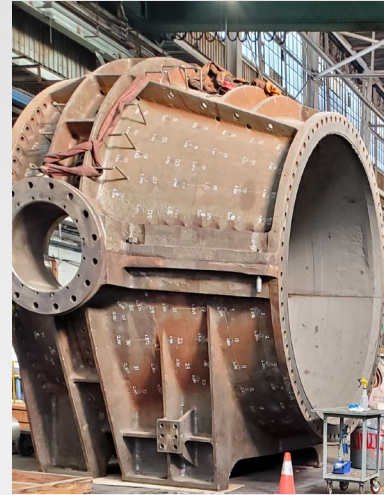
- May 2022: Construction Contract Awarded
- June 2022: New spherical valves delivered to Oroville
- October 2022: Contractor mobilized for Phase 1
- Spring 2023: Obtained regulatory (DSOD & FERC) approvals
- May 2023: DWR authorized Contractor to proceed with Phase 2 due to favorable hydrologic conditions
- July 2023: Contractor completed Phase 1
- Fall 2024: Anticipate completion of Phase 2



Gianelli Pumping-Generating Plant Unit and Valve Refurbishment

Project Status:

- Refurbishment of pump-turbine embedded components, head cover, and impeller to OEM Design
 - Embedded components complete
 - Remaining components nearly complete
- Discharge valve refurbishment (156" butterfly valve)
 - Approximately 50% complete
- All electrical work completed
- Project is a multi-year effort to complete the eight Units at Gianelli PGP. On schedule to complete last unit (Unit 4) in 2024



Dos Amigos Pumping Plant Unit 3 Refurbishment

Project Status:

- Completed refurbishment of blade trolley cart, impeller stand, and other specialized maintenance equipment
- Deriaz variable pitch pump unit refurbishment
 - Head cover scheduled for completion by end of 2023
 - Impeller completed by mid-2024
 - Shaft and new coupling bolts completed by early to mid-2024
- Completed Stator Platform for maintenance access
- Electrical work completed on Unit 3
- Project is a multi-year effort to complete the six Units at Dos Amigos Pumping Plant, approximately one unit every two years. First unit (U3) scheduled for completion by early 2025.



Devil's Den Pumping Plant Fire Event, Emergency Response

Devil's Den Pumping Plant is one of three (3) identical facilities the Coastal Branch located in San Joaquin Field Division.

On August 11, 2023 the facility suffered an electrical fault causing an Arc-Flash that destroyed the cubicle from Unit 1, all its contents and a section of 4160V bus. Heat, pressure and smoke from the blast damaged the entire 4160V switchgear lineup with cubicles for motor Units 1-6, 480V station service, 70kV breaker and power transformer controls.

Recovery efforts in progress to return Unit 4, 5, and 6 by last week of October.



Devil's Den Pumping Plant Fire Event, Emergency Response

Temporary bypass moving water from
Berrenda Mesa Canal to Bluestone
Pumping Plant (Two - One mile long pipes
with four pumps)



Chippis Island Tidal Habitat Restoration Project (CMGC)

Project implemented to restore the diked managed wetland back to tidal wetlands.

Project Scope:

- Vegetation Management exterior levee (Phase 2A)
- Initial repair of levee and dewatering (Phase 2B)
- Vegetation Management interior island (Phase 2C)

Project Status:

- Preconstruction services contract awarded July 2023
- Phase 2A construction contract awarded July 2023
- Phase 2B construction contract anticipated award date July 2024
- Phase 2C construction contract anticipated award date September 2024
- Project completion November 2025



QUESTIONS?

