

An aerial photograph of the Diablo Canyon nuclear power plant. The plant's containment domes and various buildings are visible on a coastal peninsula. To the left, the ocean features rocky shorelines and waves crashing against a breakwater. In the background, rolling green hills and mountains rise under a clear sky. The text "Diablo Canyon", "Independent", and "Safety Committee" is overlaid in a large, bold, dark blue font.

Diablo Canyon
Independent
Safety Committee

Public Meeting
June 20 & 21, 2024

Avila Lighthouse Suites

DCPP Regulatory Performance Update

Jordan Tyman
Director, Risk and Compliance
June 20, 2024

February 2024 – June 2024

- DCPP continues to provide safe, clean, and reliable electricity to Californians
- Since the last update to the DCISC, the NRC oversight of DCPP included approximately ~2000 hours of inspection time
- All violations received since the last DCISC update were of very low safety significance
- DCPP remains in the highest performance category for all NRC Performance Indicators

DCPP remains in the highest performance category

- In addition to performing inspections, the NRC also evaluates every nuclear plant using performance indicators
- NRC gauges licensee performance using 16 separate indicators related to various aspects of plant operation
- DCPP remains in the highest performance category of the NRC's Reactor Oversight Process Action Matrix
 - Inspection findings very low safety significance (i.e., Green)
 - Performance indicators within the expected range (i.e., Green)

February 2024 – June 2024

NRC Violations

- All violations received since the last DCISC update were of very low safety significance
- Violation themes include:
 - Procedures and Opportunities to have more level of detail in processes and procedures
 - Enhance compliance controls

February 2024 –June 2024

Licensee Event Reports

- Unit 2 Aux Bldg Building Ventilation (ABVS) Fan Trip
 - Unit 2 ABVS includes two (2) full capacity exhaust fans (E-1 /E-2)
 - March 19, 2024, PG&E requested, and the NRC granted, additional time to resolve a maintenance issue related to ABVS exhaust fan
 - Due to the redundant exhaust fan being concurrently inoperable to allow on-line repair without requiring an unnecessary plant shutdown
 - Redundant fan remained in service and available with its emergency backup power supply out service for planned maintenance
 - Unit 2 building ventilation fan repair time limits were exceeded (with permission from NRC via Notice of Enforcement Discretion) Unit 2 LER 2024-001-00, submitted 05/17/2024

Upcoming NRC Inspections and License Renewal Inspections

- **Operator License Exam Validation – June 2024**
- **Age-Related Degradation – June 2024**
- **License Renewal Audit / Follow-up – June 2024**
- **Security Equipment and Training – June 2024**
- **Emergency Planning Evaluated Exercise – July 2024**

Recent License Amendments

- **License Amendment 245 (Unit 1) and 247 (Unit 2), issued 05/29/24
– Revision to Technical Specifications to adopt Risk Informed Completion Times**

License Amendment Requests

- **10 CFR 50.69, Risk-informed categorization of structures, systems, and components – submitted September 2023**
- **Revision to TS 5.6.6 Pressure and Temperature Limits Report, to include additional NRC-approved calculation methodologies – submitted February 2024**
- **Security Early Warning System (EWS) LAR – Submitted March 2024 (Security Related)**

February 2024 – June 2024

- DCPP remains in the highest NRC regulatory performance category
- All violations received since the last DCISC update were of very low safety significance
- DCPP continues to provide safe, clean, and reliable electricity to Californians

Thank you

Jordan Tyman
Director, Risk and Compliance



DCISC Public Meeting

Erik Werner

Director, Outage Planning & Execution

June 20, 2024



Summary

- Diablo Canyon Unit 2 twenty-fourth refueling outage (2R24) was safely executed during the Spring of 2024
- The 50-day planned outage encompassed scope from license renewal required inspections, planned maintenance, and other refueling activities
- Approximately 1,000 temporary additional workers supported the safe completion of 2R24



2R24 Performance

Safety

- No recordable injuries/nuclear safety incidents. All safety goals met

Human Performance

- Worker practices and standards ensured all human performance goals met

Duration

- Refueling outage activities safely completed ahead of planned schedule

Dose

- Radiation worker accumulated exposure below planned target

Power Ascension

- Unit safely returned to full power within planned duration, following implementation of contingency plan



2R24 Key Scope Completed

Primary

- Including large motor overhauls

Secondary

- Including valve inspections and maintenance

Electrical

- Including 4kV/480V Bus G maintenance

License Renewal

- Including refueling water storage tank inspection

Projects

- Including traveling screen frame replacements

Diablo Canyon Power Plant: State of the Plant Update

Justin Rogers
Station Director
June 20, 2024





Plant Operation

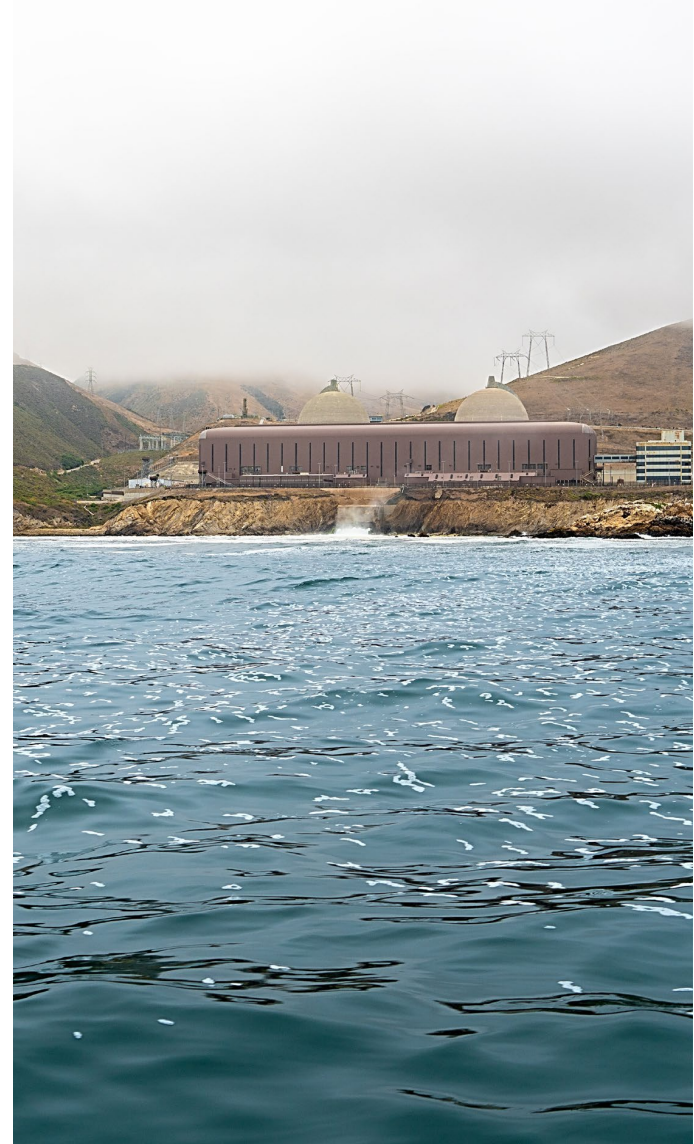
- Units 1 & 2 are safely operating at 100% power with 100% reliability
- All NRC Performance Indicators (PIs) are Green



Key Events

Recently Completed Activities

- ✓ February 26-29, 2024 – Nuclear Safety Oversight Committee (NSOC) Onsite Observations
- ✓ April 8-19, 2024 – Nuclear Regulatory Commission (NRC) In-service Inspection
- ✓ April 8-12, 2024 – NRC License Renewal Inspection
- ✓ April 15-19, 2024 – NRC Radiation Protection (RP) Inspection
- ✓ April 15-19, 2024 – World Association of Nuclear Operators (WANO) Unit 2 Maintenance and RP Outage Observations
- ✓ May 13-15, 2024 – WANO Unit 2 Operations Mode Transition Observations
- ✓ May 20, 2024 – Unit 2 Refueling Outage (2R24) Completed with Unit 2 Paralleled to the Grid



Leadership Changes

Dan McBride – Director of Nuclear Operations Services



Michael Jackson – Director of Nuclear Engineering





Upcoming Station Activities

Nuclear Safety Oversight Committee (NSOC) Site Visits

- June 24-27, 2024

World Association of Nuclear Operators (WANO) Peer Review

- Crew Performance Evaluation - July 8-12, 2024
- Peer Review - August 5-16, 2024

Nuclear Regulatory Commission (NRC) Inspections

- License Renewal Inspection – June 17-21, 2024
- Age-Related Degradation Inspection – June 10-28, 2024
- Emergency Preparedness (EP) Evaluated Exercise & Inspection – July 29 – August 2, 2024
- Radiation Protection (RP) Inspection – August 12-25, 2024
- License Renewal Inspection – August 19-23, 2024
- Problem Identification & Resolution (PI&R) Inspection – September 9-27, 2024

Thank You

Justin Rogers,
Diablo Canyon Power Plant
Station Director



DCPP Projects Updates

Allen Wilson

Sr. Director, Engineering, Projects, & Outages

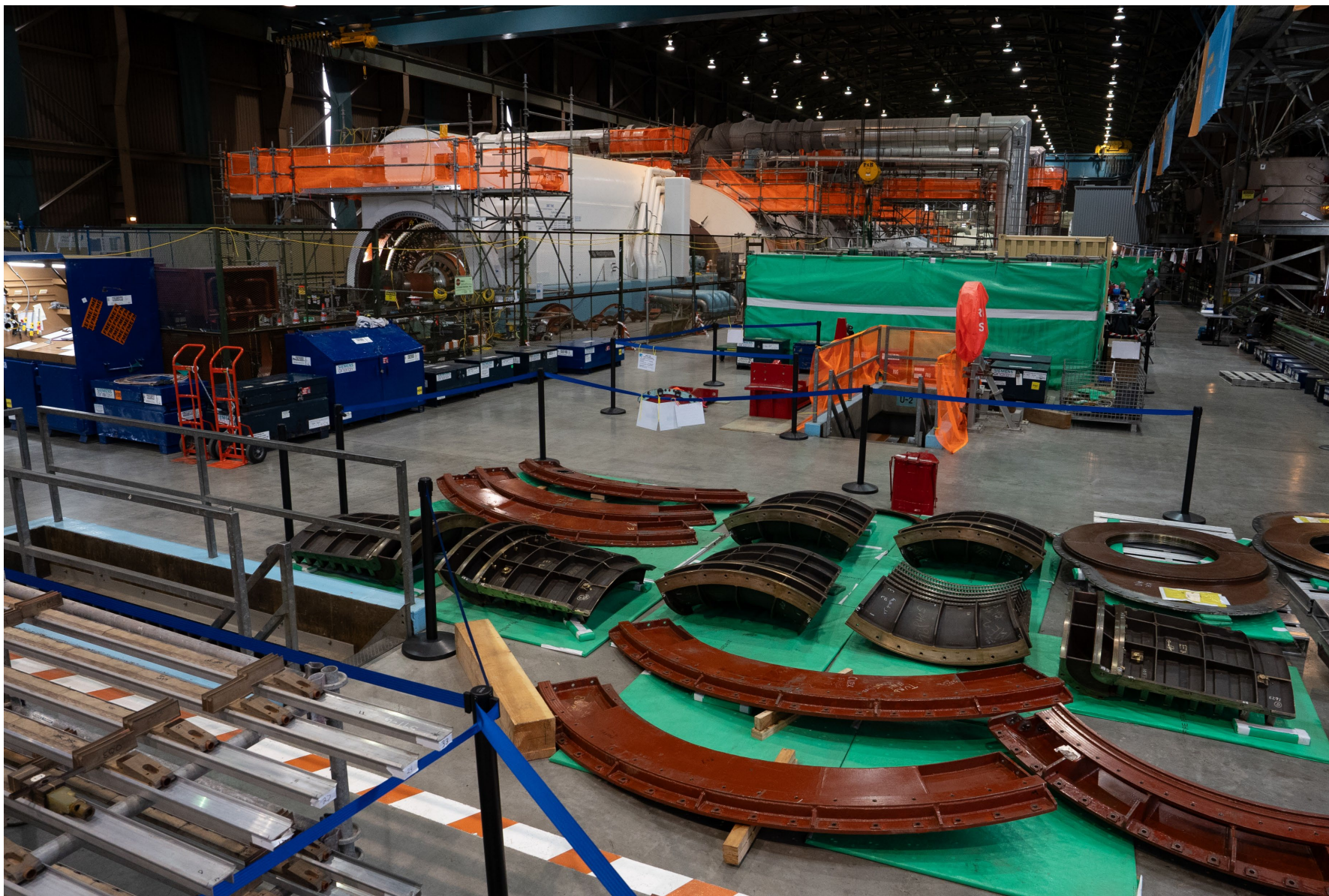
June 20, 2024



Diablo Canyon Power Plant Projects

- Diablo Canyon Power Plant (DCPP) continues to make necessary project investments to ensure safe and reliable operations.
- The Nuclear Regulatory Commission (NRC) continues to assess and reaffirm that Diablo Canyon is operating safely and is among the highest performing plants in the nation.
- Additionally, the Diablo Canyon Independent Safety Committee (DCISC) thoroughly evaluates activities at DCPP on a routine basis.

Main Generator Inspections



High Voltage Transformer Reliability Investments



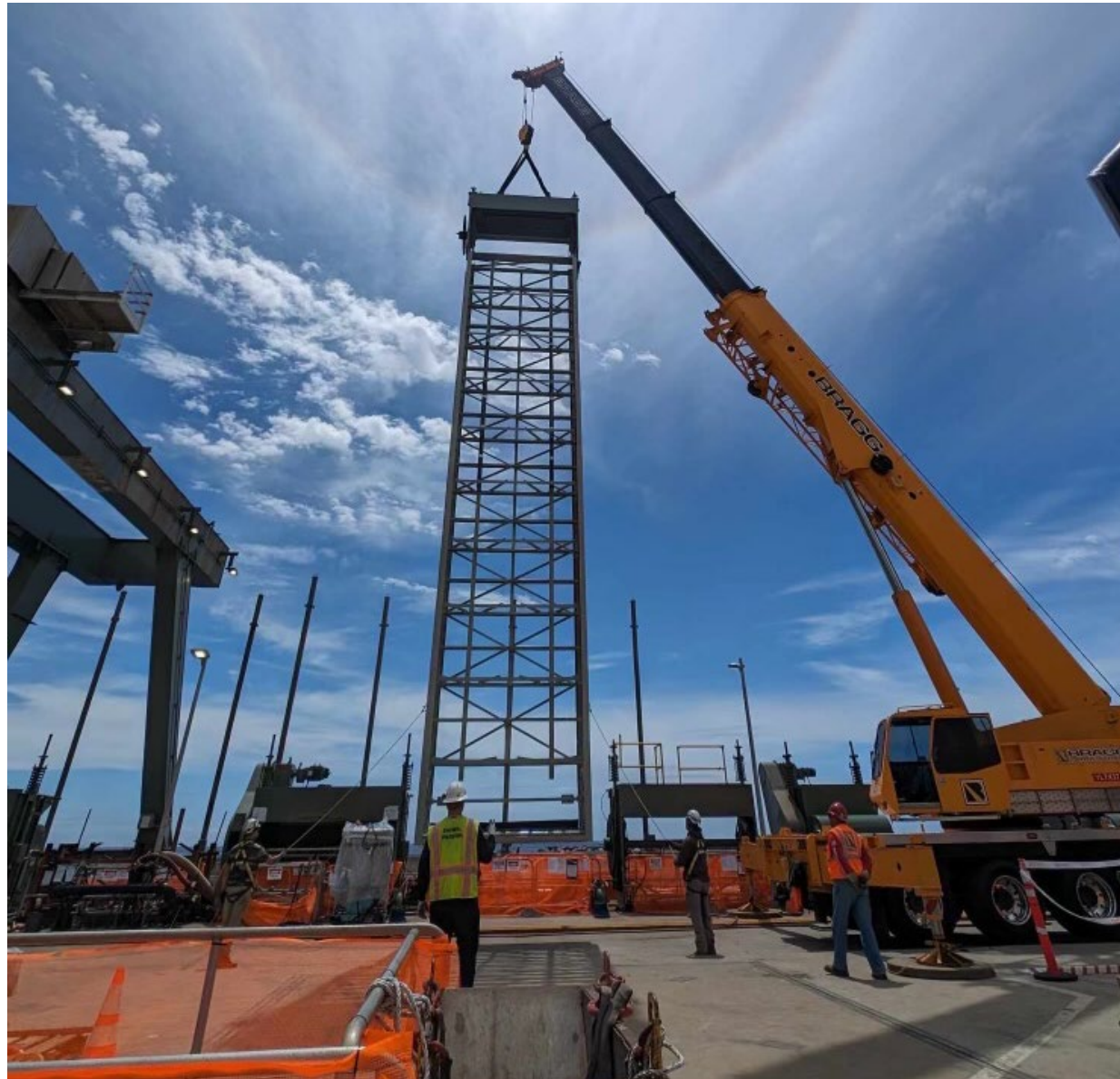
Main Condenser Seawater Expansion Joint Replacement



Main Condenser Steam Side Strap Project



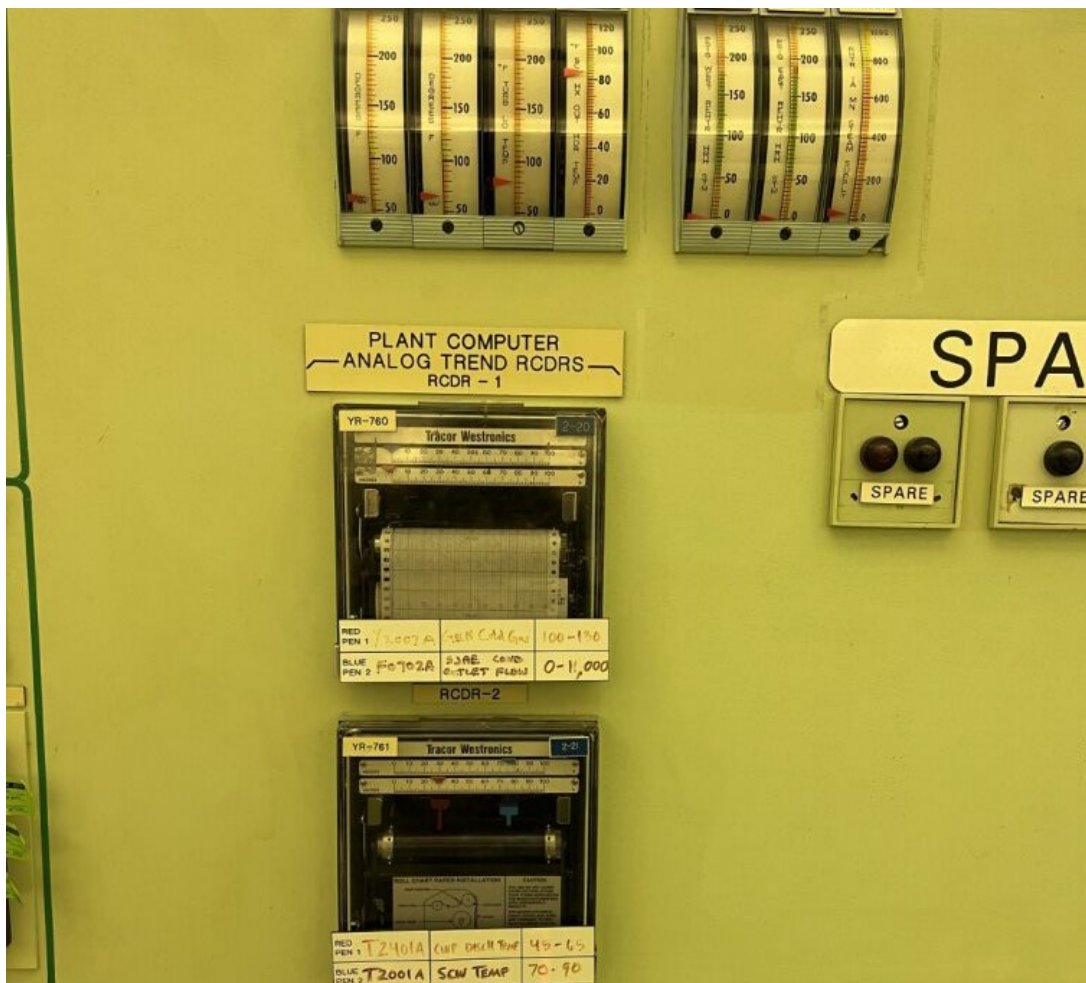
Traveling Screen Frame Replacements



Condensate Booster Pump Pedestal & Motor Replacements



Control Room Chart Recorder Replacements



BEFORE



AFTER

Upcoming 2024 Daily & 2025 Refueling Outage Projects

- Online 2024 Projects focus on secondary plant reliability & critical spare inventory. Project list includes:
 - Intake dredging, high voltage transformer spare improvements, critical motor & pump procurement, intake upgrades, air compressor replacements, and HVAC studies

- 2025 Refueling Outage Projects will continue to focus on secondary plant reliability, obsolescence upgrades & required in-service inspections. Project list includes:
 - Digital rod position indication display replacements, fuel transfer cart upgrades, traveling screen replacements, intake bar rack replacements, chart recorder upgrades, and reactor vessel inspections

Thank you

Allen Wilson

Sr. Director, Engineering, Projects, & Outages



DCISC – Update on Spent Fuel Management

Al Bates, Director, Nuclear Fuel and Decommissioning

- Planning and Scheduling for Upcoming Movements of Spent Fuel from Wet to Dry Storage
- Update on License Renewal for the Independent Spent Fuel Storage Installation
- Update on the Procurement of a New Spent Fuel Storage System from ORANO



Diablo Canyon Power Plant

Generating Excellence

June 20, 2024

2024 Used Fuel Offload Campaign



Overview of DC ISFSI

- Sized to store all fuel through the end of the DCPD current operating licenses, with an additional 20 years storage in the pools.
- DCPD has safely completed seven loading campaigns since 2009
- Currently houses 1,856 fuel assemblies in 58 storage casks



2024 Fuel Offload Campaign

Why

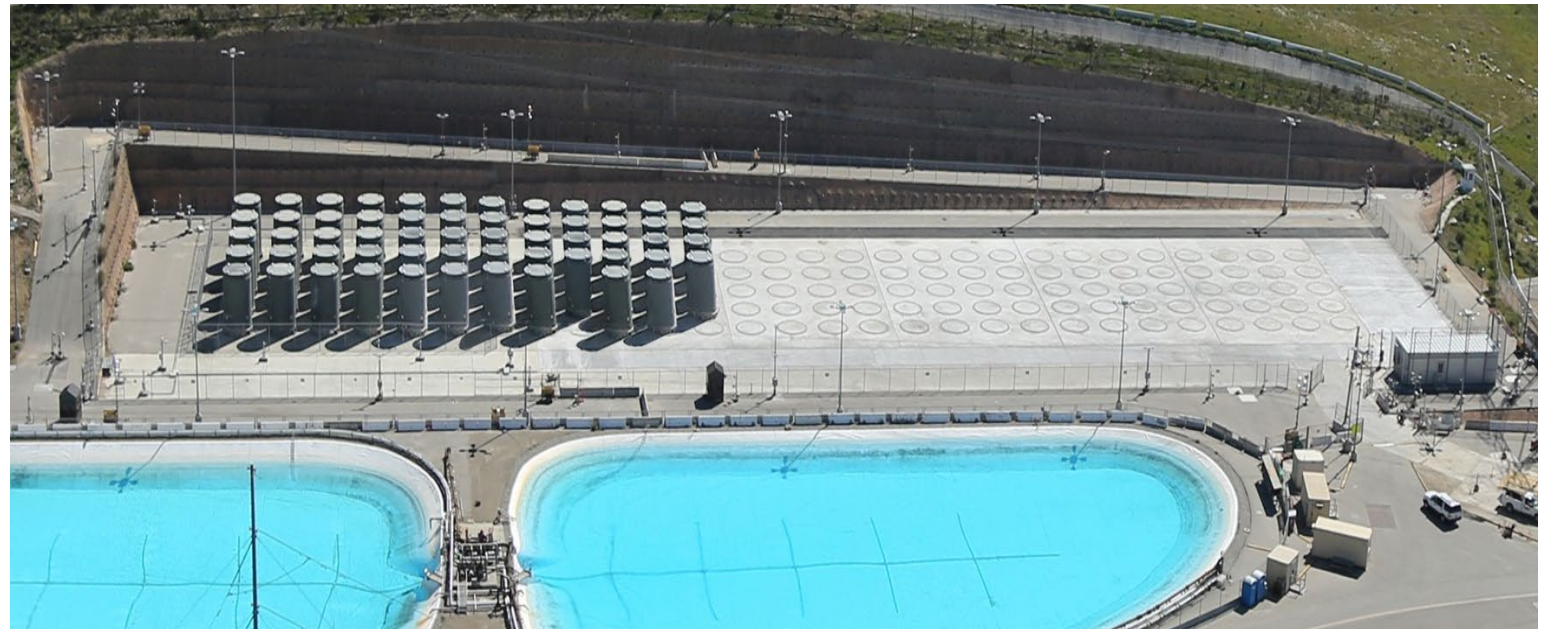
- To support continued operations in accordance with SB-846

Scope

- Transfer 192 spent fuel assemblies from each spent fuel pool to dry storage
- 12 Canisters, 1 per week (6 days), from July 22 to October 18 (1 rest week off over Labor day)

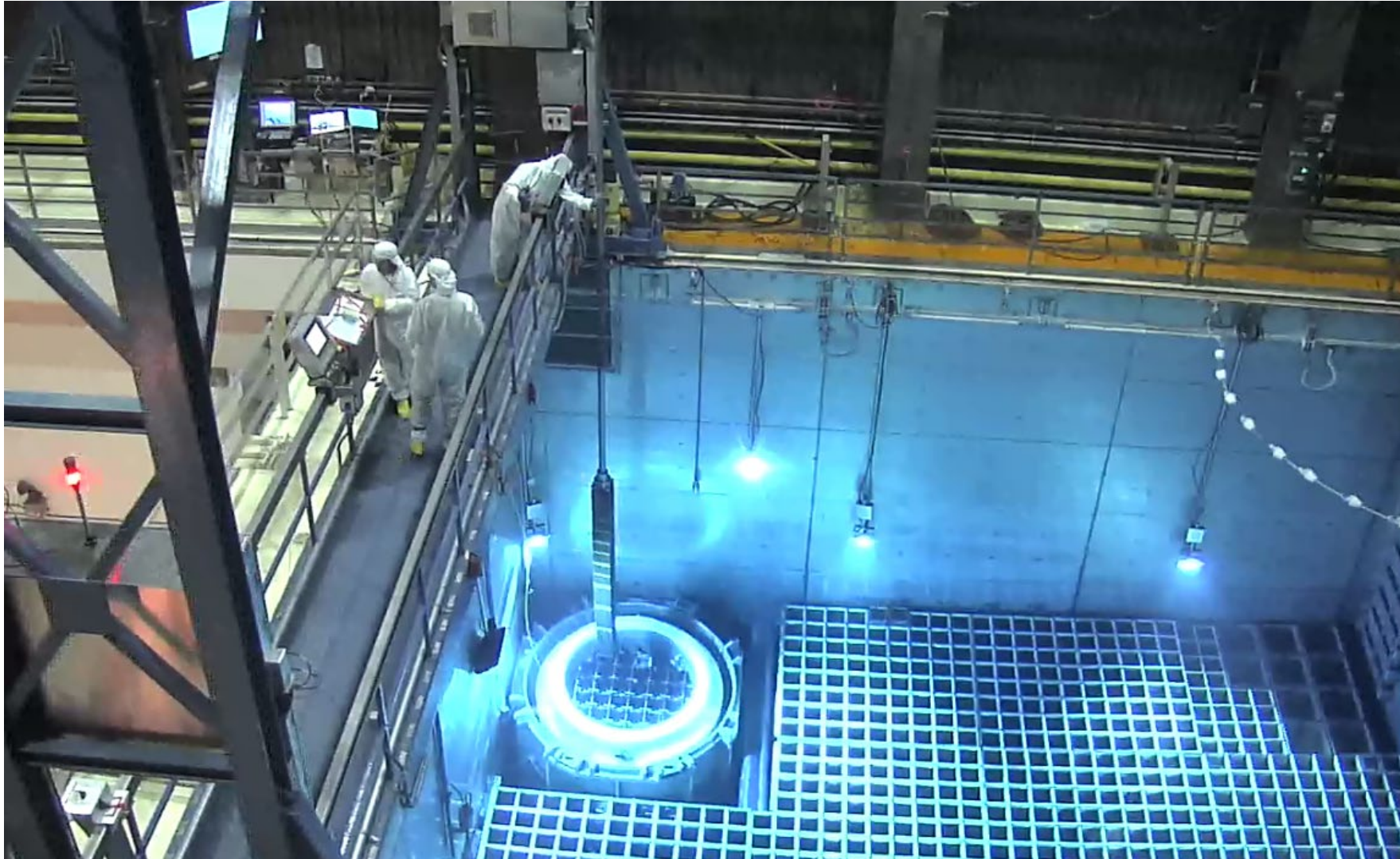
Safe and Successful Execution

- Robust procedures govern all work activities
- PG&E management oversight of all work activities
- Contract partners (Holtec and Bragg) provide experienced crew members
- Pre-campaign training and dry runs
- External SME readiness reviews
- DCPD readiness challenge boards
- ALARA reviews



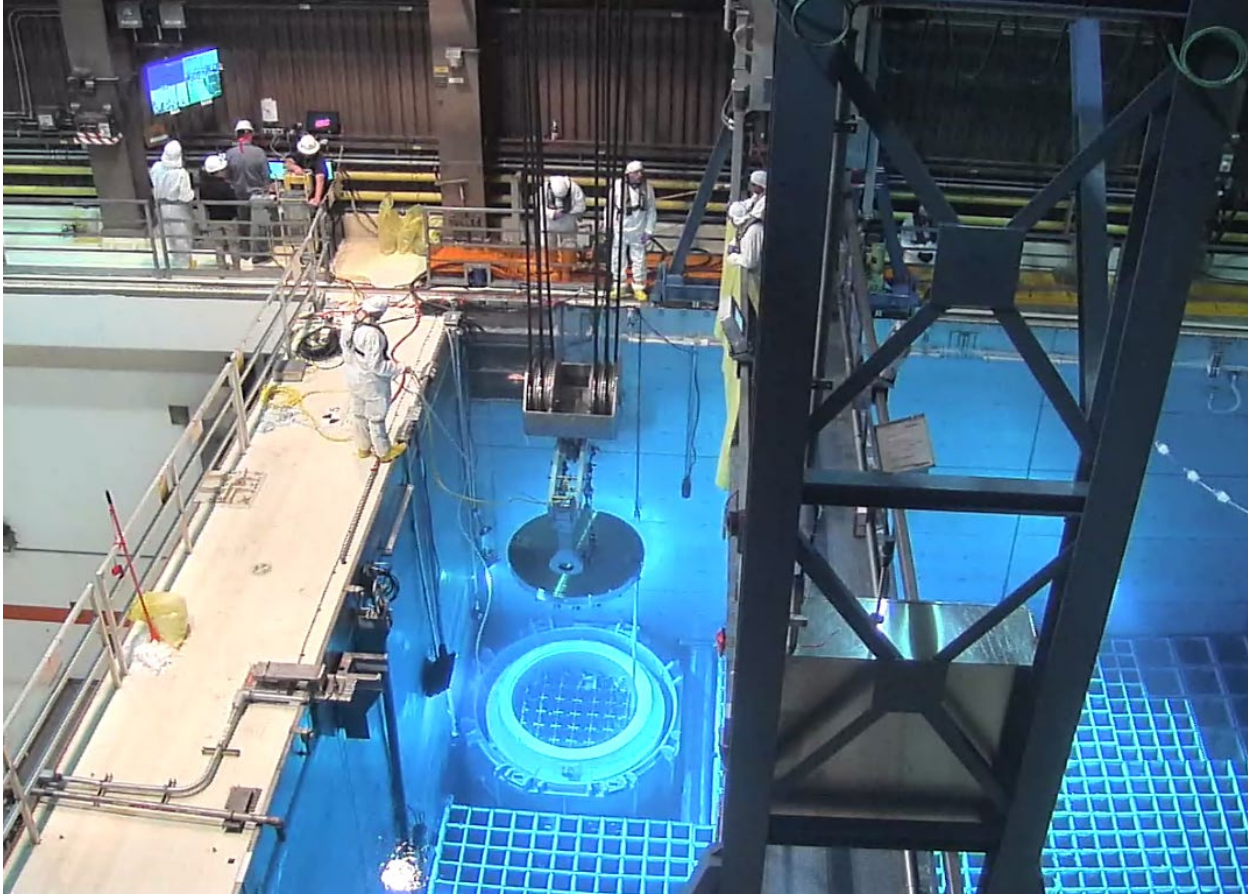
Overview of Loading Campaign

Loading Fuel from the Spent Fuel Pool into the Holtec Multi-Purpose Container

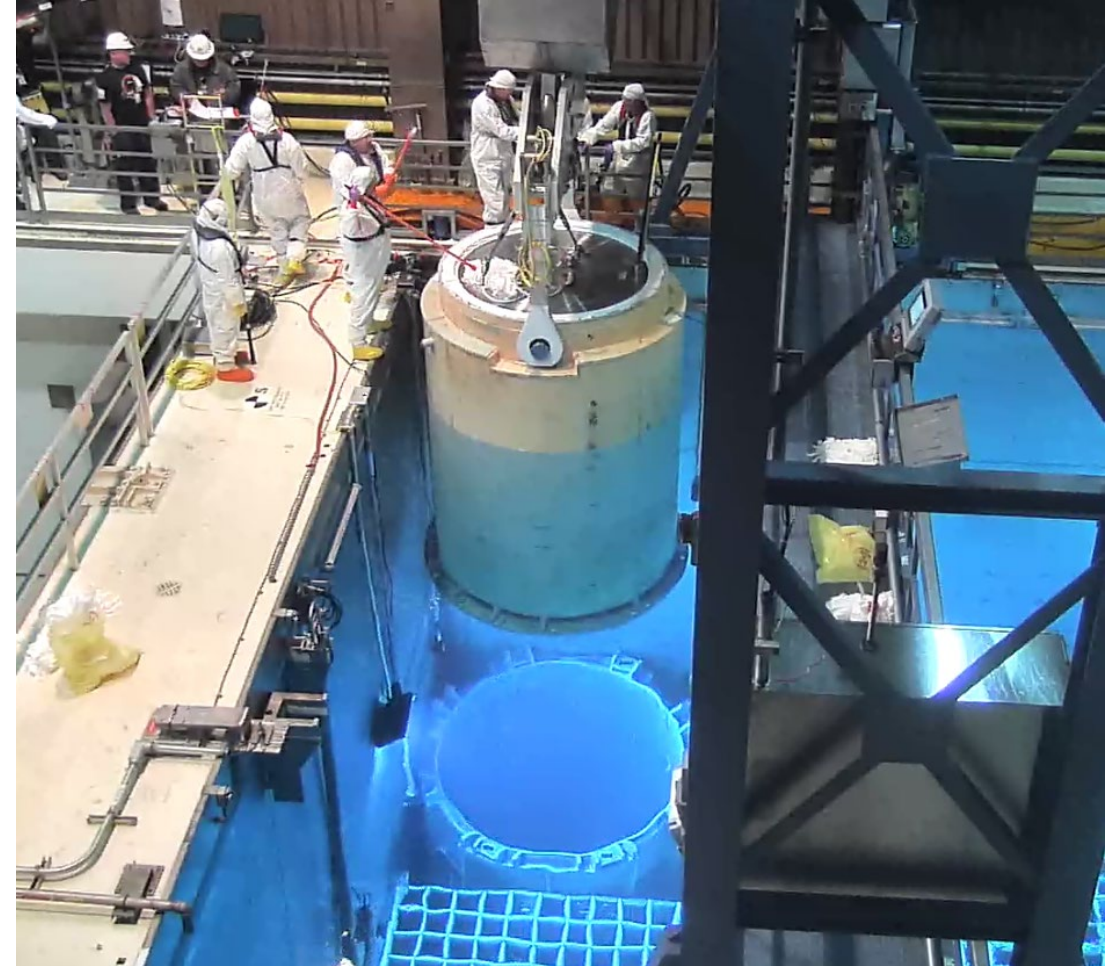


Overview of Loading Campaign

Installing the MPC Lid,
Post- Fuel Loading

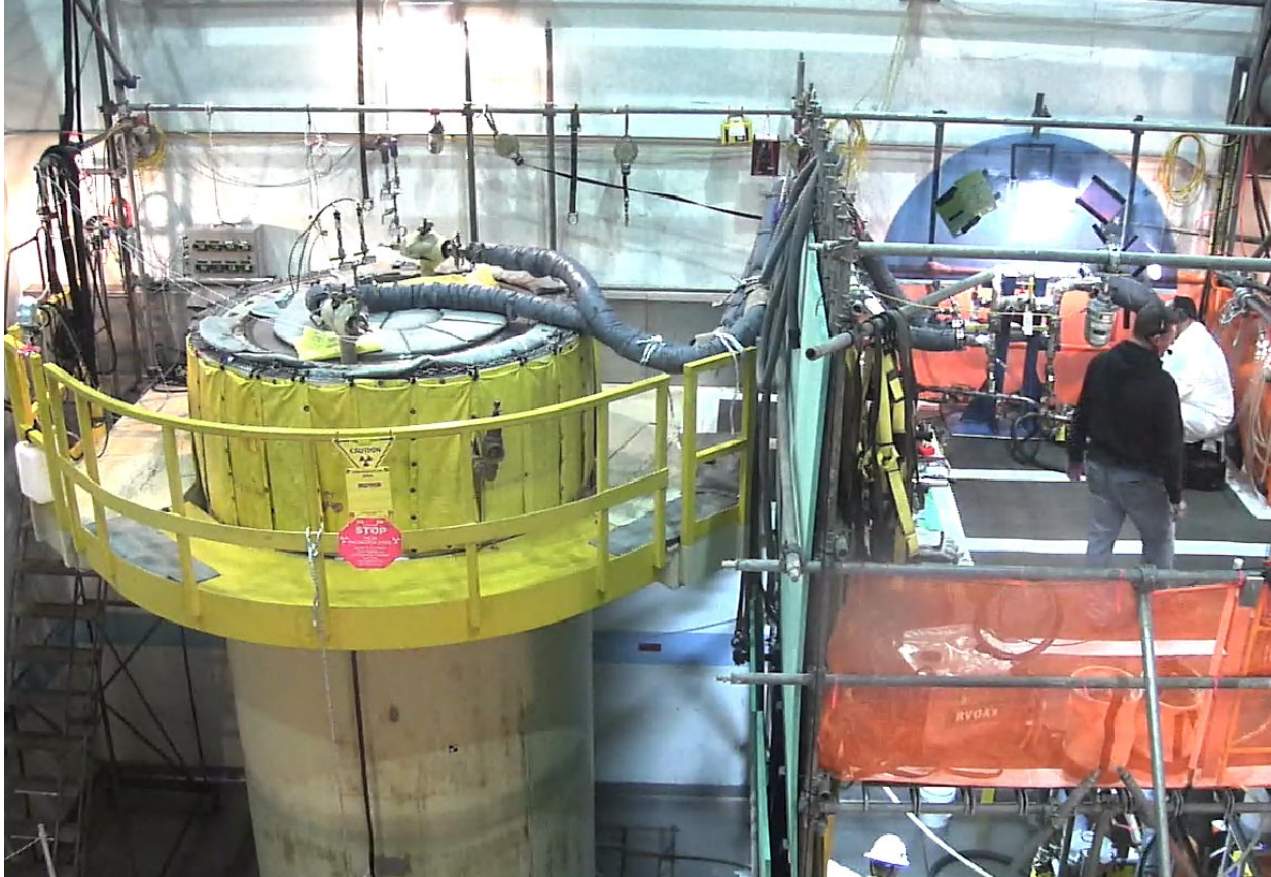


Removing Transfer Cask from Spent
Fuel Pool with Loaded MPC-32

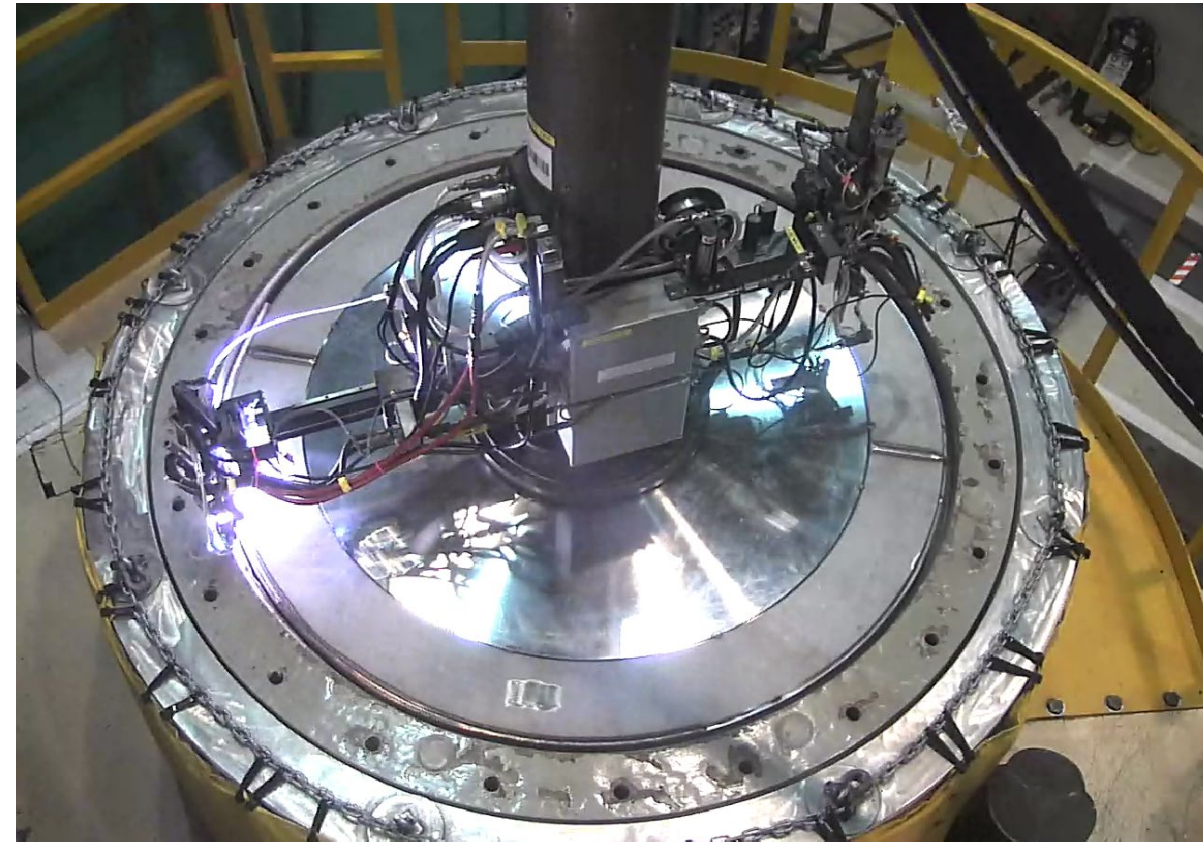


Overview of Loading Campaign

Loaded Transfer Cask in Seismic Restraint for Welding, Dehydration and Helium Backfill



Automated MPC Closure Welding



Overview of Loading Campaign

Transporting Loaded MPC
in Transfer Cask to ISFSI



Transferring MPC from Transfer Cask to
Storage Cask



Overview of Loading Campaign

Removing Loaded Storage Cask from the Cask Transfer Facility



Overview of Loading Campaign

Installing and Anchoring the Loaded Storage Cask on ISFSI Pad



2024 Fuel Offload Campaign

Current Status

- All Hi-STORMs have been received and are ready to be filled with dense concrete (w/ hematite additive)
- All Multi-Purpose Canisters have been received
- Equipment has been refurbished and tested
- Fuel assemblies identified and inspected
- Procedures updated to latest standards
- ALARA goals established
- Schedule established and crews identified
- Training and dry runs scheduled
- External SMEs performing readiness review
- DCPD readiness challenge boards scheduled



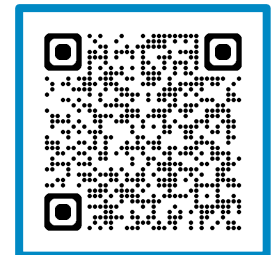
License Renewal for the Independent Spent Fuel Storage Installation



Update on ISFSI License Renewal

Diablo Canyon ISFSI License Renewal Application (LRA)

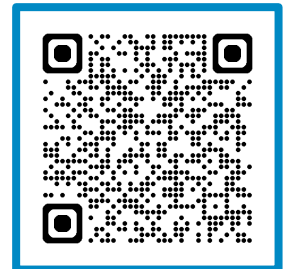
- PG&E submitted the DC ISFSI LRA to the NRC on March 9, 2022 ([ML22068A189](#))
- NRC accepted the application for review on September 8, 2022 ([ML22238A239](#))
 - As part of the acceptance letter the NRC documented that PG&E met the timely requirements for the application in accordance with 10 CFR 72.42(b).
- PG&E submitted Revision 1 of the LRA on August 10, 2023, to remove statements within the LRA related to DCCP ceasing operations by the expiration date of the operating licenses. ([ML23222A287](#))



Update on ISFSI License Renewal

Diablo Canyon ISFSI License Renewal Application (LRA)

- Contentions: One contention was submitted and subsequently withdrawn. The Atomic Safety and Licensing Board dismissed the contention and terminated the proceeding. ([ML23258A211](#))
- PG&E responded to RAIs from the NRC on September 21, 2023 ([ML23264A859](#))
- PG&E responded to another set of RAIs from the NRC on April 30, 2024 ([ML24121A179](#))
- Next Steps: As documented in the most recent set of RAIs, the NRC plans to complete the technical review process for the ISFSI in November 2024.



Update on the Procurement of a New Spent Fuel Dry Storage System from ORANO



Update on ORANO System



Diablo Canyon Power Plant

Update on Permits and Approvals for Extended Operations

Presented by

June 20, 2024

TOM JONES, Sr. Director, Regulatory, Environmental and Repurposing



About Diablo Canyon Power Plant

Generates 18,000 GWh Annually

- 17% of CA's clean energy
- 9% of CA's total electricity supply
- Enough to meet the energy needs of three million Californians





NRC License Renewal Process

Application

- Application for License Renewal (LR) submitted to the Nuclear Regulatory Commission (NRC) on November 7, 2023

Review

- NRC determined the LR application sufficient for review on Dec 19, 2023
- NRC held oral arguments on contentions admissibility in Bethesda MD headquarters on May 22, 2024
 - Determination by July 6, 2024

Review

- The U.S. Nuclear Regulatory Commission's (NRC's) federal licensing action is subject to permitting and review by State and Federal agencies

Communication

- PG&E remains in communication with involved agency staff and is working through the regulatory permitting processes and consultations



Federal Agencies

Coordination

- PG&E has coordinated with the NRC, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and U.S. Army Corps of Engineers (USACE) regarding the federal Endangered Species Act (ESA) Section 7 Consultation required for License Renewal and Decommissioning
- Section 7 Consultation is a process where federal agency actions are reviewed by the USFWS/NMFS to ensure compliance with the Endangered Species Act
- Next steps for the NRC's Section 7 Consultation with USFWS and NMFS, PG&E submitted a draft USACE permit application package to the agencies on May 29, 2024



State Agencies

Status

- In June 2023, the California State Lands Commission amended Lease PRC 9347.1 to extend the lease term through October 2030, consistent with Senate Bill 846
- In December 2023, the California Public Utilities Commission voted to extend operations of DCPP through October 2030, consistent with Senate Bill 846
- PG&E has corresponded with the Central Coast Regional Water Quality Control Board regarding the Clean Water Act Section 401 Certification and National Pollutant Discharge Elimination System (NPDES) permit
 - Status: RWQCB is coordinating internally and will be in communication with PG&E regarding permitting processes



State Agencies (Continued)

Status

- PG&E submitted a Coastal Zone Management Act Certification request to the California Coastal Commission (CCC) concurrently with the NRC LRA submittal
- CCC deemed initial certification request incomplete in December 2023 and sent PG&E additional correspondence on May 2, 2024
- PG&E provided detailed response and supplemental information to CCC on May 21, 2024
- PG&E will work with CCC to resolve application status



Local Agencies

Permitting

- PG&E remains in compliance with SLO County permitting agencies with active permits including SLO County Air Pollution Control District and the Environmental Health Services Division (County CUPA)

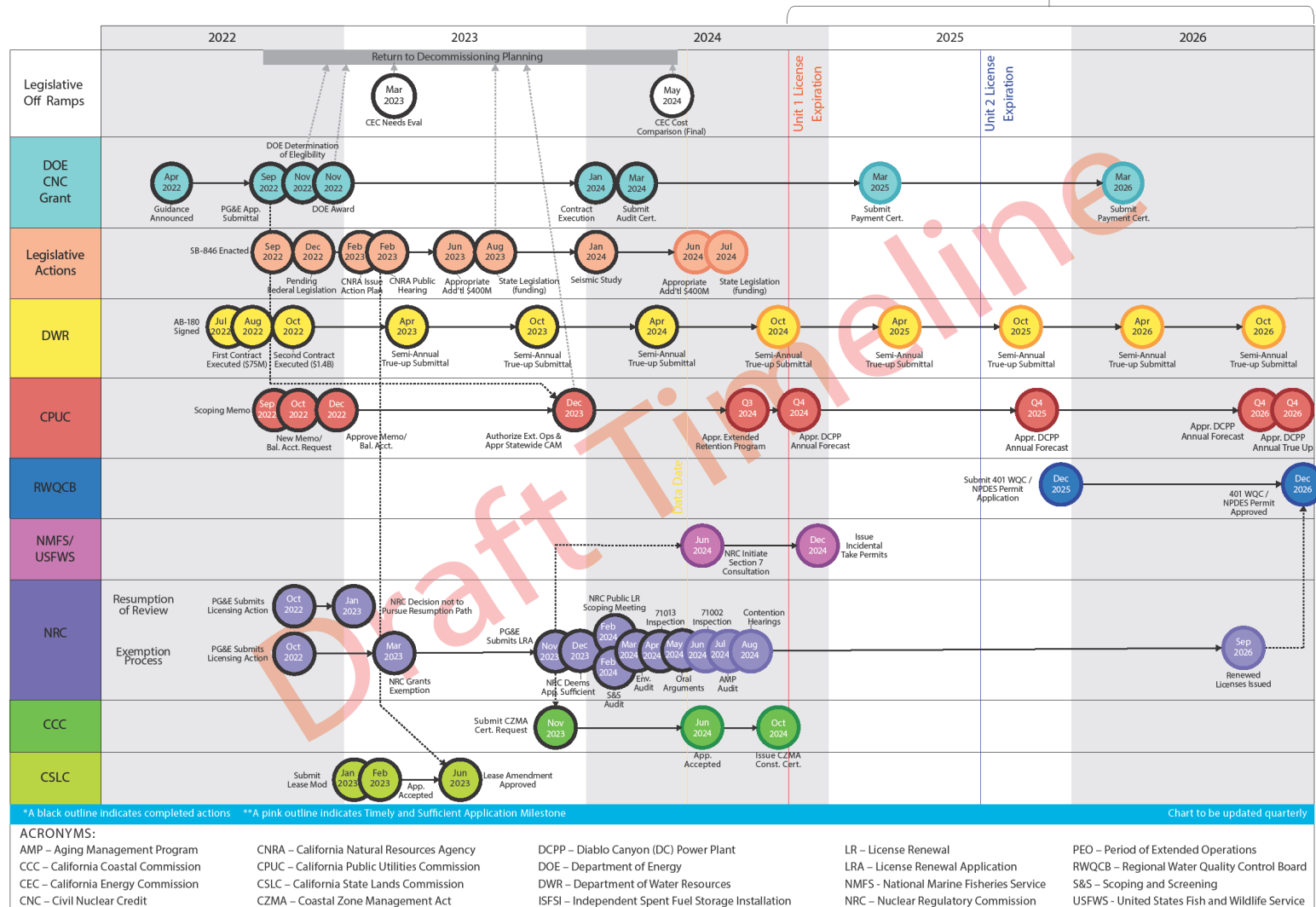
Questions?



Flow path

Diablo Canyon License Renewal Planning Path

Published Date: 05/30/2024





Robert Budnitz, Member, with Richard McWhorter, Consultant

- 1. Review of the Updated Seismic Assessment Required by Senate Bill 846**
- 2. Radioactive Waste Management**
- 3. Observe Outage Management Team Meeting**
- 4. Auxiliary Feedwater System Health**
- 5. Cyber Security Program**
- 6. Plant Tour**
- 7. Seismically Induced Systems Interactions Program Update**
- 8. Cause Evaluation for Auxiliary Saltwater Pump 2-2 Failure**
- 9. Maintenance Department**
- 10. Meet with DCPD Officer**
- 11. Refueling Outage 2R24 Preparations and Outage Safety Plan**
- 12. Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector**



Review of the Updated Seismic Assessment Required by SB846

- **Discussed Process for the Updated Seismic Assessment**
- **Question/Answer Session on Several Technical Topics**
- **Information Gained Supported the May 30, 2024, Updated Comprehensive Seismic Safety Update**
- **Separate May 30, 2024, Fact-Finding Report to be Discussed During Friday Afternoon Session**
- **Conclusion: PG&E provided information addressing each of several DCISC questions on the updated seismic assessment required by SB846. The DCISC will continue its work to develop its own independent review of the updated seismic assessment report.**



Radioactive Waste Management

- Reviewed Health of Liquid Radioactive Waste Processing Systems.
 - System Processes About 1.5 Million Gallons Per Year.
 - Liquids Stored, Processed by Filtration and/or Ion Exchange.
 - After Processing, Liquids are Recycled or Sampled, Diluted and Discharged via the Auxiliary Saltwater System.
 - Total Activity Discharged in 2023 Less Than 17 mCi (excluding tritium).
 - System in Good Health Overall.
- Reviewed Current Solid Waste Disposal Contracts.
- Conclusion: Liquid and Solid Radwaste Processing Systems were effective in minimizing the volumes and radioactivity levels discharged or sent to licensed disposal facilities.



Outage Management Team Meeting

- **Review of Preparations for Refueling Outage 2R24**
- **One Major Work Item, Anion Retention Tank Leak Repair, Was Reviewed and Approved for Rescheduling to 2R25.**
- **Major Project Readiness Review for Condenser Water Box Repairs and Tube Sheet Coatings**
- **Conclusion: The March 19, 2024, Outage Management Team meeting was conducted efficiently and effectively.**



Auxiliary Feedwater Systems

- Reviewed Health of Auxiliary Feedwater Systems.
 - Both Units' Systems Rated as 'Green' (Healthy)
 - Minor Issue with Turbine-Driven Pump Testing Methods
 - Reviewing Extent of Condition for a Recent Leak on a Main Feedwater Line Near Its Connection to Auxiliary Feedwater
- Conclusion: The DCISC found that DCCP's Auxiliary Feedwater Systems continue to be given close attention, and the systems on both Units continue to be rated as Green (Healthy) with no major issues.



Cyber Security Program

- Core Elements of the Cyber Security Program Focus on Identifying and Implementing Protection for all the Critical Digital Assets (CDAs) at DCCP.
- About 4,000 CDAs in Program Across 66 Critical Systems (Including Security).
- Mature Program Focused on Actively Monitoring the Protection of CDAs.
- Recent NRC Inspection with Generally Positive Results, One Green Non-Cited Violation.
- Conclusion: DCCP's Cyber Security Program appeared to be effectively managed, and efforts are continuing to ensure that the program is successfully sustained.



Plant Tour

- **Areas Toured**
 - **Unit 2 Turbine Building**
 - **Control Room**
 - **Emergency Diesel Generator 2-2 (In Testing Following Maintenance)**
 - **Outage Preparations Underway in Many Areas**
- **Conclusion: The DCISC Fact-Finding Team toured the Unit 2 Control Room and maintenance work areas in the Turbine Building. Work was being managed properly, and all areas were clean, orderly, and well lit, with equipment in excellent condition.**



Seismically Induced Systems Interactions Program

- Ensures Safe-Shutdown and Accident-Mitigating SSCs Will Properly Function During and Following Seismic Event
- Focuses on Protecting Plant Equipment in Specific Locations from Unrestrained Temporary Equipment or Components
- Program Healthy; No Significant Issues
- Recent NRC Resident Inspection Found Barrel in Targeted Area, Green Non-Cited Violation
- **Conclusion:** DCPP's Seismic Induced Systems Interaction Program appeared effective in ensuring that systems important to safety would not be impacted by material or equipment temporarily stored within the plant during a seismic event.



Cause Evaluation for Auxiliary Saltwater Pump 2-2 Failure

- Motor Radial Bearing Degradation Found During Oil Samples in Fall 2023.
- Motor Replaced in December 2023 Under One-Time Only Exigent Technical Specification Change to Allow 144 Hours for Repair (Normally 72 Hours).
- Abnormal Bearing Wear Found, Similar to November 2018 Failure on Pump 2-1.
- Previous Root Cause Was Found to Be Improper Axial Bearing Pre-Loading.
- New Cause Evaluation Will Not Be Completed Until Mid-April (Later Deferred to 3Q24).
- Conclusion: A motor bearing degradation on Auxiliary Saltwater Pump 2-2 discovered in the fall of 2023 was found to be a repeat of a bearing degradation issue that occurred in 2018. DCPD has initiated a Cause Evaluation for the repeat failure, and the DCISC should review the results of that Cause Evaluation following its completion.



Maintenance Department

- **Staffing Update:**
 - 250 Current Employees With Recruiting Ongoing for an Additional 60.
 - Staffing at End of 2024 Forecasted to be 286.
 - About 270 Employees Needed to Staff Department Long Term.
 - 40 Supplemental Contractors Core, Surging to 1,100 During Recent Outages.
- **Actively Tracking/Managing Qualifications, Typically 12 Months to Complete.**
- **Good Recent Human Performance in the Department.**
- **Conclusion: DCPP Maintenance Department overall performance was good. The department continued to aggressively hire and train staff to support extended operations.**



Meet with DCPD Officer

- Adam Peck, Site Vice President
- Discussed the Fact-finding Agenda Items and Other Items of Mutual Interest.
- Conclusion: The regular meetings between DCISC and DCPD Officers and Directors continue to be beneficial for both organizations.



Refueling Outage 2R24 Planning and Safety Schedule

- Reviewed Refueling Outage 2R24 Goals and Status of Major Milestones.
- Safety Plan and Schedule Similar to Refueling Outage 1R24, Except No Steam Generator Internal Inspections.
- Safety Schedule Contained Three ‘Yellow’ Conditions and No ‘Orange’ or ‘Red’ Conditions.
- Conclusion: DCP’s preparations for Refueling Outage 2R24 were progressing satisfactorily with some planning activities behind schedule due to the large volume of planned work. The draft Outage Safety Plan appeared to be comprehensive and effective for maintaining an appropriate safety margin during upcoming planned outage activities.



Meet with NRC Senior Resident Inspector

- **Items Discussed**
 - **Recent NRC Inspection Activities**
 - **Refueling Outage 2R24 Preparations**
 - **Recent Failure of Auxiliary Building Fan During Emergency Diesel Generator Maintenance Outage**
- **Conclusion: DCISC's meetings with the NRC continue to be beneficial.**



Robert Budnitz, Member, with Richard McWhorter, Consultant

- 1. Review of the Updated Seismic Assessment Required by Senate Bill 846**
- 2. Radioactive Waste Management**
- 3. Observe Outage Management Team Meeting**
- 4. Auxiliary Feedwater System Health**
- 5. Cyber Security Program**
- 6. Plant Tour**
- 7. Seismically Induced Systems Interactions Program Update**
- 8. Cause Evaluation for Auxiliary Saltwater Pump 2-2 Failure**
- 9. Maintenance Department**
- 10. Meet with DCPD Officer**
- 11. Refueling Outage 2R24 Preparations and Outage Safety Plan**
- 12. Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector**



Update on Embrittlement Status

Responses to Public Comments

On Dr. Mark Kirk's Reports

June 20, 2024

Brief Review of DCISC Activities on Diablo Canyon Unit 1 Embrittlement

- At the request of the Energy Commission in 2009, DCISC reviewed status of reactor pressure vessel integrity for 20 year license extension.
- In a letter dated February 28, 2011 DCISC evaluated Pressurized Thermal Shock (PTS) and Seismic Effects.
- Subject to new information, both units could safely operate for 20 additional years in terms of PTS concerns.

Recent Interactions

- February 2023, June 2023, September 2023 Public Meetings
 - Mr. Severance and others* expressed concerns about Unit 1 embrittlement status.
- Embrittlement expert - Dr. Mark Kirk hired to address concerns.
- January 31, 2024 - DCISC issued two reports by Dr. Kirk addressing public concerns.
- February 21, 2024 - Presentation to DCISC and the public

* San Luis Obispo Mothers for Peace (Dr. Digby Macdonald)

Interactions Continued

- February 29, 2024 - DCISC requests any additional comments by March 15, 2024 (45 day comment period)
- DCISC extends comment period to April 15, 2024
- April 15th Mr. Severance replies
- April 30, then May 6th - Ms. Curran requests extensions for Dr. MacDonald - to date no comments received
- May 28, 2024 - DCISC posts Dr. Kirk's comments to Mr. Severance
- June 10, 2024 – Mr. Severance responds to Dr. Kirk's comments

Dr. Kirk's Conclusions on Unit 1 Embrittlement

- **PG&E's current reactor *vessel integrity calculations* were confirmed and validated**
 - Unit 1 meets the NRC requirements for reactor vessel integrity through 60 years of service
 - Credibility of data was correctly assessed
 - Sister plant data was correctly used
 - Deferrals of Capsule B testing were appropriate
 - Vessel inspection schedule is appropriate

Capsule B is scheduled for withdrawal during the 2025 refueling outage

- Removal is needed by 2028 to be consistent with NRC guidance
- When new data is obtained it may change the outcome of current RPV integrity assessments

Supplemental analyses performed using more data and modern analytical techniques

Pressurized thermal shock:

- Shows NRC screening criteria very unlikely to be exceeded in 60 years

Upper Shelf Energy

- Shows USE may fall below NRC screening criteria by 2029 or 2030
- A more accurate analysis following NRC guidance is highly likely to show that acceptable margins will remain past these dates

Mr. Severance Additional Key Comments on Kirk Report

- (A) Were NRC procedures used correctly:
- NRC Credibility
 - Use of sister plant data
 - Limited data
 - Why embrittlement forecasts have changed?

Comments Continued

- (B) Deferrals of removal of Capsule B and its impact – claims a 4th capsule is needed in 40 year license term
- (C) Kirk Report shows Upper Shelf Energy may reach screening limit by 2029/2030.

Dr. Kirk's Reply

- (A) There is continued misunderstanding of NRC procedures.
 - Additional explanations provided and explained.
 - Forecast changed due to use of current information (2011)

- (B) Review of NRC requirements and license shows Diablo Canyon is a 3 capsule plant, not 4.
 - The NRC document from 2006 (ML061660220) does not amend the Diablo Canyon's 40-year license to make testing of a 4th capsule mandatory.

- (C) Mr. Severance is correct about the supplemental USE analysis, but it is not NRC approved. Diablo Canyon meets all NRC license requirements.
 - Equivalent margins analysis has shown acceptable results for all other plants

Summary of Responses

- None of the concerns change the conclusions of both of Kirk's reports.
 - Embrittlement predictions are compliant with NRC regulations
 - PTS screening criteria will not be exceeded for 60 years of operation
 - USE meets NRC regulatory requirements for 60 years.
 - Capsule B testing is not required for the first 40 years of operation but will be required by 2028 for extended operation.

Conclusions

- Dr. Kirk's evaluation as contained in Reports 1 and 2 support the following conclusions:
 - PG&E's Current Reactor Vessel integrity calculations were confirmed and validated
 - Unit 1 meets NRC's requirements for reactor vessel integrity through 60 years of service
 - Removal of capsule B is recommended by 2028 to be consistent with NRC guidance.
 - Supplemental analysis of PTS shows screening criteria will not be exceeded for 60 years.
 - Supplemental analysis shows that USE screening criteria may be reached in 2029/2030 but not approved.

Mr. Severance Additional Comments on Kirk's Comments

- Challenges NRC process of reviewing embrittlement
- Relies on Dr. Macdonald's input which the committee has not received
- Challenges use of sister plant information
- Challenges Kirk's embrittlement assessment since it is not NRC approved (in License Amendment application)
- Wants review of Equivalent Full Power Years estimate in Kirk report.

Dr. Kirk's Reply to June 10th Mr. Severance Comments

- Nothing in Mr. Severance's latest comments change Dr. Kirk's conclusions found in Parts 1 and 2 Reports
- If Mr. Severance challenges NRC review process on embrittlement, including uses of sister plant data, he should address issues with the Nuclear Regulatory Commission.
- Using the latest information (2011), Unit 1 meets NRC embrittlement requirements for 60 years of operation.

Recommendation

- Consider endorsing Dr. Kirk's Reports 1 and 2 conclusion on the condition of Unit 1 Reactor Pressure Vessel embrittlement as safe for continued operation.



Peter Lam, Member, with R. Ferman Wardell, Consultant

- 1. As Low As Reasonably Achievable (ALARA) Review Committee Meeting**
- 2. Reactivity Management Update**
- 3. Meet with NRC Senior Resident Inspector**
- 4. Digital Systems Update**
- 5. Observe Outage Maintenance Activity**
- 6. Outage 2R24 Safety Plan and Outage Status**
- 7. Operations Update and Operational Decision-Making (ODM) Process**
- 8. Emergency Diesel Generator 2–2 Maintenance Outage Window**
- 9. Meet with DCCP Officer Maureen Zawalick**
- 10. Margin Management Update**
- 11. Reactor Coolant System Boric Acid Indication Root Cause Evaluation**
- 12. Intake Cove Dredging Update**



As Low As Reasonably Achievable (ALARA) Review Committee Meeting

- ALARA defined as follows: *The act of making every reasonable effort to maintain exposures to radiation as far below the applicable dose limits as is practical . . .*
- ALARA Review Committee: *A team of individuals from senior management . . . which provides formal oversight, direction, and accountability for DCPD radiological performance, including the ALARA Program.*
- Radiation Protection Group presented outage dose goal and progress to date
- Committee concluded dose goal was still appropriate
- Conclusion: DCPD ALARA Committee meeting effective



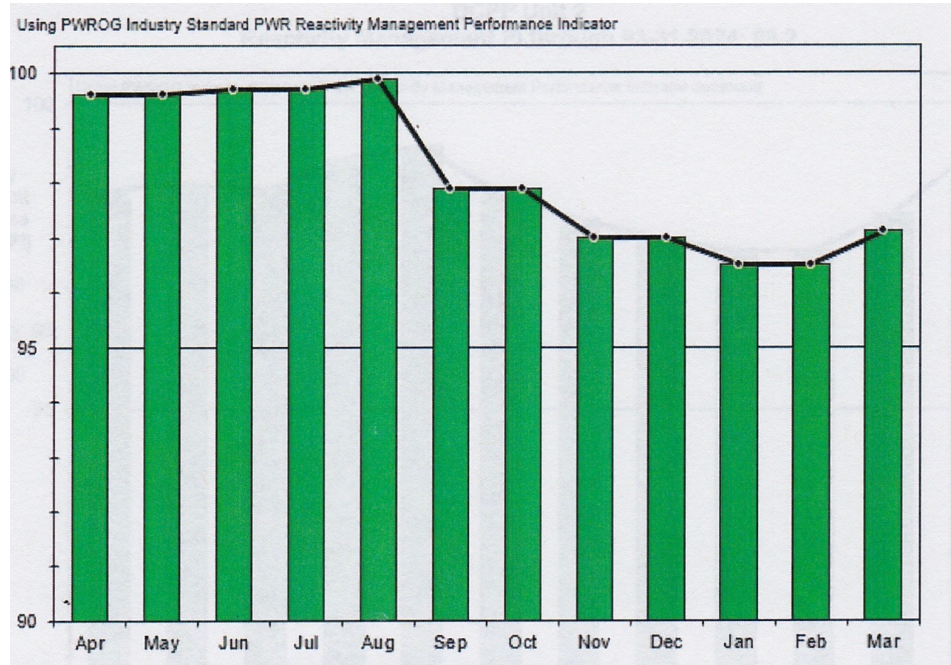
Reactivity Management (RM) Update

- Reactivity is defined as *“the fractional change in neutron population from one neutron generation cycle to the next, or the measure of departure from criticality.”* or . . .
- Potential for a nuclear reactor core to change its power level
- Operations is overall responsible for safe reactivity management
- Reactivity Management Leadership Team oversees DCPP RM, evaluates RM events, and produces performance measures
- RM Events Mostly Minor: Precursors or No Impact
- RM Performance Measures on Next Slide

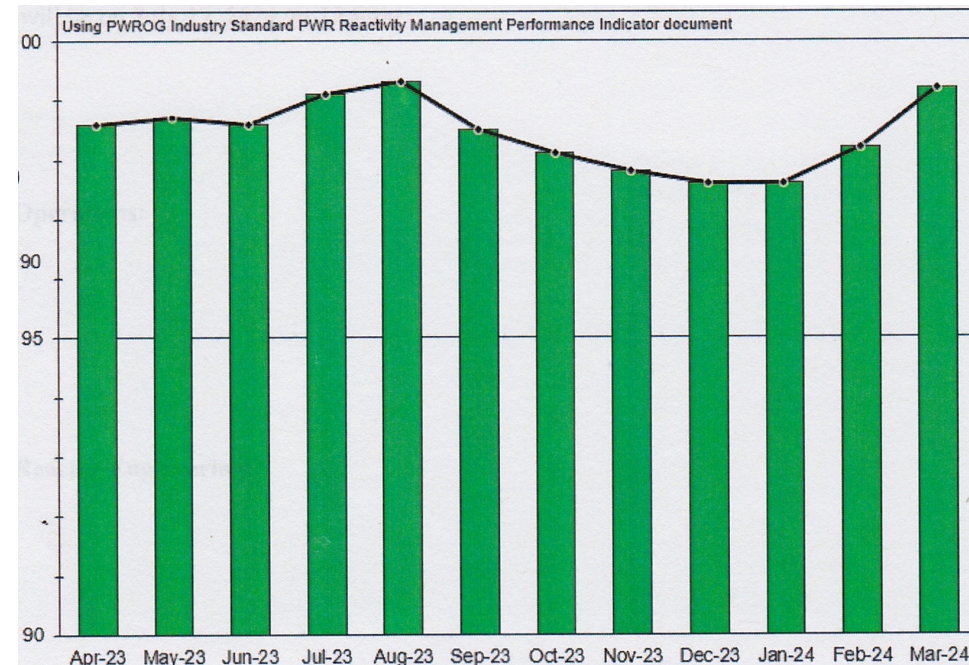
(Continued)



Reactivity Management (RM) Update



Unit 1 RM Performance



Unit 2 RM Performance

↑
Good

Conclusion – DCCP's Reactivity Management Program has been effective in assuring safe plant operation.



Meeting with NRC Senior Resident Inspector

- Recent and Future NRC Inspection Activities
- Refueling Outage 2R24 Results
- Plans for Replacement of NRC Resident Inspector
- Unit 1 Reactor Pressure Vessel Embrittlement
- Inspections of Transfer of Spent Fuel from Spent Fuel Pool to Independent Spent Fuel Storage Installation
- Conclusion: Meeting with NRC Senior Resident Inspector Was Beneficial and Should Be Continued



Digital Systems Update

- “Digital” Means Control Functions Changed from Electro–Mechanical Analog to Digital.
- Digital Controls Are More Precise, Flexible, and Reliable, Providing A Safer Operating Plant.
- There Are Nine Primary Digital Control Systems. Examples:
 - Turbine Control
 - Feedwater Control
 - Process Control
 - Meteorological Towers
 - Intake Traveling Screens
 - Spent Fuel Pool Bridge Cranes
 - Plant Process Computers
 - Unit 1 Main Annunciators
 - Transient Recording

Continued



Digital Systems Update, Continued

- Comprehensive Digital Control System Review in 2018
- Long-Term Strategy
- All Digital Control Systems Are Part of DCCP Cyber Security Program
- Digital Systems Have All Operated As Designed
- Have Taken A Burden Off Operators
- Conclusions:
 - DCCP Digital Systems in Good Health
 - Digital Systems Beneficial for DCCP



Observe DCPM Maintenance Activity

- Outage 2R24 in Progress
- DCISC Consultant Toured Unit 2 Main Turbine Deck with Maintenance Manager.
- Extensive Turbine and Generator Periodic Maintenance Work in Progress.
- Observed the Lifting of the Heavy Main Feedwater Pump Steam Casing
- Lifting By Turbine Building Gantry Crane
- Lifting Observed to Have Been Done Safely and Professionally



Outage 2R24 Safety Plan and Outage Status

- Outage Safety Plan Provides Information on Outage Safety Requirements and Highlights Potential Higher Risk Activities.
- Outage Safety Plan Used During Plant Cold Shutdown (Mode 5) and Refueling.
- “Phoenix” Probabilistic Risk Assessment Computer Program Used to Assess Risk When Equipment Removed from Service for Maintenance.
- Phoenix Uses “N+1” Defense-in-Depth Model.
- Three “N” Activities Planned – Reactor Coolant System Draindown
- All Outage Personnel ALARA Dose Goals Were On Track.
- All Outage Work Activities Were On Track.
- Conclusion: Outage Being Safely Performed



Operations Update and Operational Decision-Making Process

- **Operations Staffing**
 - **New Non-Licensed Operator Classes Begun January 2023 (21 Candidates) and August 2023 (17 Candidates)**
 - **License Upgrade Class (RO to SRO) Class Completed March 2023 and New Class Begins Summer 2024**
 - **Operator Staffing Is and Will Continue to Be at Full Levels.**
- **Operations Performance**
 - **Predominantly Good (Green)**

Continued



Operational Decision-Making (ODM) Process

- **Operating Procedures Used for Plant Normal, Off-Normal Conditions, Transients**
- **ODM Used to Address Degraded Conditions with Plant in Stable Condition**
 - **Decision Team and Team Leader Assigned**
 - **Research and Identify Problem Scope**
 - **Determine Solution and Timeliness**
 - **Get Management Approval and Communicate and Implement Solution**
 - **Perform Effectiveness Review Afterward**

Continued



Operational Decision-Making Process, Continued

- Four ODM Examples Reviewed by FFT
 1. Ramp Unit 2 Down in Power to Separate from Grid for Replacement of Switchyard Lightning Arrestor Prior to Wet Weather Conditions.
 2. Both Units Kept at 100% Power During High Swell Ocean Conditions.
 3. Both Units Ramped Down to 50% Power During High Swell Ocean Conditions.
 4. Perform Unit 2 Condenser Saltwater In-leakage Search and Plugging During Unit 2 Tunnel Cleaning.
- Conclusions: – Operations Staffing and Performance Good
 - Operational Decision-Making Process Effective



Emergency Diesel Generator 2-2 Maintenance Outage Window Event

- EDG 2-2 Normally Aligned to “H” Electrical Bus
- EDG 2-2 Out of Service for Maintenance, Thus “Inoperable”
- Auxiliary Building (AB) Exhaust Fan E-1 Tripped Offline.
- AB Fan E-2 Started Automatically But Also “Inoperable” (on “H Bus”)
- Technical Specification 3.0.3 Permitted Four Hours for Repairs or Unit 2 Would Have to Begin Shut Down
- Four Hours Not Enough – DCPP Requested NRC Enforcement Discretion
- NRC Approved Request, and Repairs Were Completed – Low Risk.
- Conclusion: EDG Repair and NRC Enforcement Discretion Were Appropriate and Performed At Low Risk.



Meet with DCPD Officer

- Meeting with Maureen Zawalick, Vice-President Technical and Business Services
 - Discussed Fact-finding Agenda Items and Other Items of Mutual Interest
 - Conclusion: DCISC FFT Meetings with DCPD Officers Mutually Beneficial



Margin Management Update

- Margin Management: *Identify issues where margin degradation was occurring and ensure that margins are monitored and maintained over time.*
- Engineering, Operations & Maintenance Are Responsible for Continually Reviewing Margins and Ensuring They Are Maintained
- Margin Management Subcommittee (MMSC): A Subcommittee of the Plant Health Committee Providing RM Oversight, Tracking RM Issues & Risk Scores
- MMSC Maintains the Top Margins Issues List (3 issues):
 1. Ultimate Heat Sink – higher Pacific Ocean Temperatures
 2. Turbine Control Systems – Improve Synchronization with Generator
 3. Modifications to Main Steam Safety Valves to Improve Margins
- Conclusion: DCCP Margin Management Program Is Effective



Reactor Coolant System Boric Acid Indication

- Boric Acid Powder Indication Found By Inservice Inspection Engineers
- Source of Dry Boric Acid Powder Was From Two-inch Socket Weld Crack
- Crack Was From Faulty Weld Subject to Normal Piping Vibration
- Temporary Repair Was Weld Overlay Permitted by ASMC Piping Code
- Final Repair Was Replacement of the Line in Outage 2R24
- Conclusion: The Weld Temporary and Final Repairs Were Appropriate



Intake Cove Sand Removal/Dredging Update

- DCISC Received Anonymous Allegation About Intake Cove Sand Removal
- Allegation Said Removal Operation Was Illegal, Unsafe and Improper
- DCISC December 2023 Fact-finding Meeting:
 - No Improprieties on Dredging Operation, Permitting, Legality, Nuclear Safety
 - No Personnel Safety or Nuclear Safety Concerns
 - Question Whether Employee Concerns Program (ECP) Received Issue Was Follow-up for January 2024 Fact-finding Meeting
- January 2024 FF: ECP Had No Record of Receiving Issue
 - Dredging Permit Application Coming, Dredging to Begin June 2024
- Conclusion: DCCP Intake Sand Removal and Dredging Appropriate



Peter Lam, Member, with R. Ferman Wardell, Consultant

- 1. As Low As Reasonably Achievable (ALARA) Review Committee Meeting**
- 2. Reactivity Management Update**
- 3. Meet with NRC Senior Resident Inspector**
- 4. Digital Systems Update**
- 5. Observe Outage Maintenance Activity**
- 6. Outage 2R24 Safety Plan and Outage Status**
- 7. Operations Update and Operational Decision-Making (ODM) Process**
- 8. Emergency Diesel Generator 2-2 Maintenance Outage Window**
- 9. Meet with DCCP Officer Maureen Zawalick**
- 10. Margin Management Update**
- 11. Reactor Coolant System Boric Acid Indication Root Cause Evaluation**
- 12. Intake Cove Dredging Update**



Per Peterson, Member, with Richard McWhorter, Consultant

- 1. Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector**
- 2. Response to DCISC Recommendation on the Use of Earthquake Response Procedures**
- 3. Observe Outage Scope Review Team and Daily Notification Review Team Meeting**
- 4. Human Performance and Plant Status Control**
- 5. Nuclear Insurance Programs**
- 6. Meteorological Information and Dose Assessment System**
- 7. Cause Evaluation for Auxiliary Saltwater Pump 2-2 Failure**
- 8. Learning Services Department**
- 9. Inspection and Maintenance Programs for Major Equipment Supports**
- 10. Plant Tour**
- 11. Refueling Equipment**
- 12. Observe Corrective Action Review Board**
- 13. Meet with DCCP Officer**
- 14. Equipment Reliability Program**



Meet with NRC Senior Resident Inspector

- **Items Discussed Included:**
 - **Recent NRC Inspection Activities**
 - **Refueling Outage 2R24 Performance**
 - **Selection and Reporting Mid-Year of New Resident Inspector.**
 - **Scheduling an NRC Presentation for the DCISC October Public Meeting**
- **Conclusion: DCISC's meetings with the NRC continue to be beneficial.**



Response to DCISC Recommendation on the Use of Earthquake Response Procedures

- Recommendation from July Fact-Finding Report and Reviewed In December.
- Ensure Procedures Include Transition Points for Assessing Availability of FLEX Equipment and Using as Needed in Post-Earthquake Situations.
- Satisfactory Changes Completed to Primary Earthquake Response Procedure, CP M-4.
- Changes In Progress for Stranded Plant Procedure, CP M-12.
- Conclusion: DCPD initiated appropriate follow-up actions in response to a DCISC recommendation concerning post-earthquake procedures. The DCISC should review additional changes planned for procedure CP M-12, “Stranded Plant,” during a future Fact-Finding Meeting.



Observe Outage Scope Review Team and Daily Notification Review Team Meeting

- Combined Meeting Reviewed Approximately 80 Equipment-Related Notifications (Corrective Action Program Deficiency Reports).
- Dispositioned Each Item with Regards to Priority for Future Action and Whether to Add Corrective Work Items to the Scope of the Ongoing Refueling Outage 2R24.
- Conclusion: The May 8, 2024, meeting of the Outage Scope Review Team and Daily Notification Review Team was conducted efficiently and effectively. The team appropriately reviewed and dispositioned approximately 80 Notifications from the previous shift.



Human Performance and Plant Status Control

- Human Performance Events:
 - No Station Level Events Since April 2021.
 - Six Department Level Events Since January 2023, All Discretionary.
- Plant Status Control Events (refers to events when an operator or technician manipulates the wrong component or places a component in the wrong position):
 - Six Precursor (Level 5) Plant Status Control Events in Last Six Months; No Level 1 Through 4 Events.
- Conclusion: DCCP's Human Performance has been excellent over the last two years based on data and trends in Human Performance events.



Nuclear Insurance Programs

- **Property Insurance:**
 - Policies from Nuclear Electric Insurance Limited (NEIL) and European Mutual Association for Nuclear Insurance (EMANI) Cover First \$1.5B.
 - Policy from NEIL Covers Second \$1.25B.
 - NEIL Regularly Inspects Plant and Provides Risk of Loss Reports. Last Report (2022) Generally Positive.
- Radiological Protection Insurance Policy Separate and Not Covered in This Meeting. (Price-Anderson Act Also Applies.)
- Conclusion: Property and equipment insurance policies were being properly maintained by PG&E, and a 2022 inspection by the insurer found no major deficiencies. The DCISC should review results from the next NEIL inspection (fall 2024) and the status of radiological protection insurance.



Meteorological Information and Dose Assessment System

- **System Used to Predict the Path and Magnitude of Radiation Releases to the Surrounding Area from an Accidental Release into the Air.**
- **No Major Software Changes; Minor Hardware Repairs.**
- **Dose Assessment Personnel (MIDAS Users) Generally Performing Well During Emergency Response Drills.**
- **Conclusion: DCPD continues to properly maintain and use the MIDAS software system for predicting the magnitude and path of airborne radioactive plumes from the plant in the event of an emergency.**



Cause Evaluation for Auxiliary Saltwater Pump 2-2 Failure

- Motor Radial Bearing Degradation Found During Oil Samples in Fall 2023.
- Follow-Up From December When Expected New Cause To Be Completed in Mid-April.
- Reported that Completion of the Cause Evaluation Was Deferred to 3Q24 to Gather More Information During Upcoming Motor Overhaul Activity.
- Conclusion: A motor bearing degradation on Auxiliary Saltwater Pump 2-2 discovered in the fall of 2023 was found to be a repeat of a bearing degradation issue that occurred in 2018. The DCISC should review the results of the Cause Evaluation following its completion.



Learning Services Department

- Initial Licensed Operator Training Going Well With Several New Classes in Progress.
- Significant Staffing Additions to Accommodate Increased Training Needs for Extended Operations While Maintaining Ongoing Training (Such as Licensed Operator Continuing Training).
- Next Institute of Nuclear Power Operations Accreditation Review Expected in Mid-2025.
- Simulator Performing Well With No Significant Deficiencies.
- Conclusion: Learning Services Department overall performance was good, and the Department was appropriately focused on ensuring that staff were properly trained and qualified to support extended operations.



Inspection and Maintenance Programs for Major Equipment Supports

- **Reactor Vessel Supported By Passive Pads Under Eight Nozzles.**
- **Each Steam Generator Supported by Four Legs With Sliding Lateral Support Frames and Snubbers.**
- **Supports Inspected Regularly as Part of the Section XI Inservice Test Program.**
- **Reviewed Configurations and Testing for Snubbers in Detail.**
- **Conclusion: DCPP' s inspection and maintenance programs for major equipment supports appeared well designed and effectively implemented.**

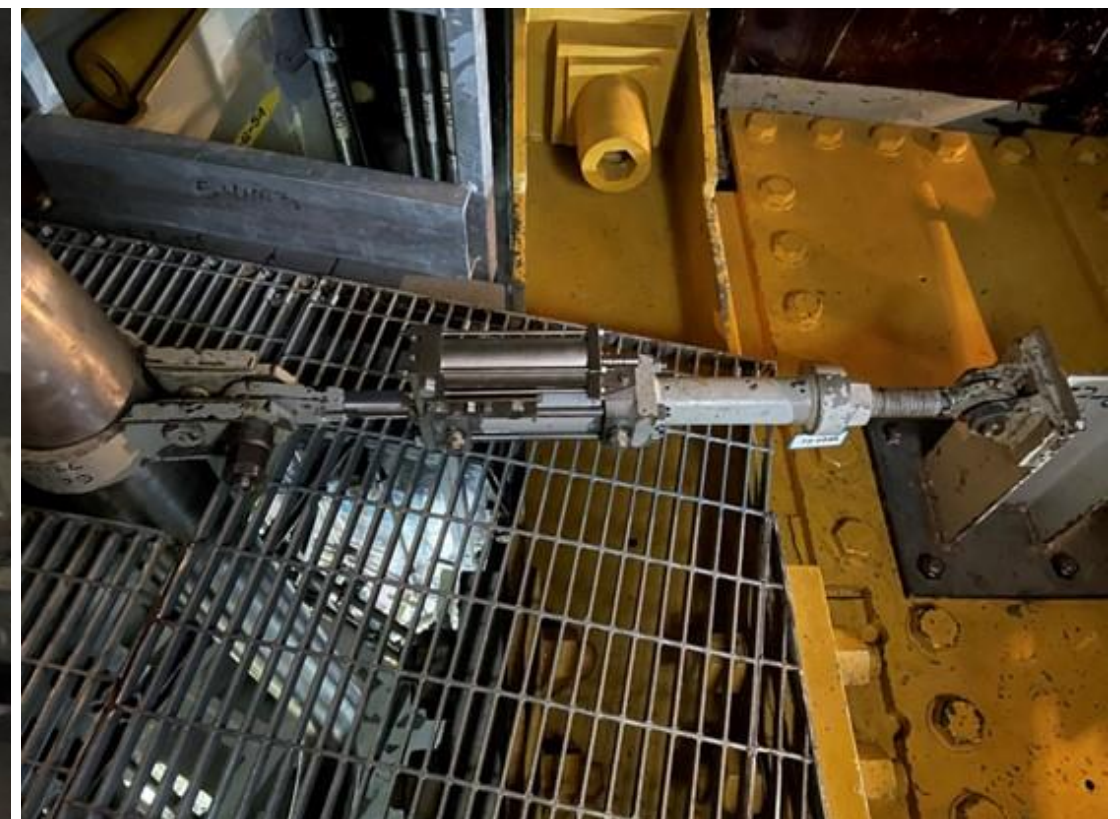


Plant Tour

- **Toured Unit 2 Reactor Containment**
 - **140' Level, Refueling Floor and Steam Generator 2-1 Enclosure**
 - **115' Level, Reactor Coolant Pump 2-4 and Steam Generator 2-4 Enclosures**
 - **91' Level Bio-shield Entry Area, Steam Generators 2-3 and 2-4 Pedestals**
- **Focused On Observing Supports and Snubbers Discussed Previously.**
- **Conclusion: The DCISC Fact-Finding Team toured the DCCP Unit 2 Containment and found that all observed areas and equipment were in good condition.**



Steam Generator and
Reactor Vessel Supports



Large and Small
Snubbers in Containment



Refueling Equipment

- Historical Issues Reviewed in Detail During March 2023 Plant Health Committee Meeting.
- Short-Term Strategies Involved Focused Checkouts and Maintenance.
- Good Performance in Last Two Refueling Outages (1R24 and 2R24).
- For the Next Refueling Outages (1R25 and 2R25), Most Critical Components to Be Replaced, Particularly in the Transfer System.
- Future Manipulator and Bridge Crane Modifications/Upgrades Also Planned.
- Conclusion: DCPP's Refueling Equipment was in good health, and DCPP experienced only minor problems with fuel movement during the recent 1R24 and 2R24 Refueling Outages. Long-term plans have been initiated to refurbish or upgrade portions of the system to support extended operations.



Corrective Action Review Board

- Provides Senior Management Oversight of the Corrective Action Program
- Meeting Agenda Included Reviewing Routine Items and Two Focused Items:
 - Cause Evaluation Assignments for Reviews of the P-9/C-9 Reactor Protection System Interlock
 - Cause Evaluation Assignments for Reviews of Refueling Outage 2R24 Draindown Clearance Delays
- Conclusion: The May 9, 2024, DCPP CARB meeting covered items on the agenda efficiently while allowing adequate time for any participants to question and discuss items of interest in more detail. There was good participation by CARB attendees.



Meet with DCPD Officer

- Adam Peck, Site Vice President
- Discussed the Fact-finding Agenda Items and Other Items of Mutual Interest.
- Conclusion: The regular meetings between DCISC and DCPD Officers and Directors continue to be beneficial for both organizations.



Equipment Reliability

- Recently Completed Actions From an Industry Initiative.
- Overall, Station Equipment Reliability High in Last Two Years. Two Major Issues:
 - Forced Outage to Repair Unit 1 Pressurizer Safety Valve
 - Forced Reduction in Power to Repair Unit 2 Biolab Line Leak
- Station Focused on Planning and Implementing Effective Plant Upgrades in the Future 1R26 and 2R26 Refueling Outages to Support Extended Operations.
- Conclusion: DCCP's Equipment Reliability programs have been effective, and station reliability has improved over the last two years. With the transition to extended operations, the station is focusing on implementation of future equipment replacements and upgrades to maintain and improve reliability.



Per Peterson, Member, with Richard McWhorter, Consultant

- 1. Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector**
- 2. Response to DCISC Recommendation on the Use of Earthquake Response Procedures**
- 3. Observe Outage Scope Review Team and Daily Notification Review Team Meeting**
- 4. Human Performance and Plant Status Control**
- 5. Nuclear Insurance Programs**
- 6. Meteorological Information and Dose Assessment System**
- 7. Cause Evaluation for Auxiliary Saltwater Pump 2-2 Failure**
- 8. Learning Services Department**
- 9. Inspection and Maintenance Programs for Major Equipment Supports**
- 10. Plant Tour**
- 11. Refueling Equipment**
- 12. Observe Corrective Action Review Board**
- 13. Meet with DCCP Officer**
- 14. Equipment Reliability Program**



**Robert Budnitz, Member,
with Richard McWhorter and Ferman Wardell, Consultants**

THIS PRESENTATION IS IN TWO PARTS

- 1. Independent Peer Review Panel Meeting on May 30, 2024**
- 2. Comprehensive Seismic Safety Update**



Role of Peer Review

The DCISC believes that expert peer review is the best way to gain high confidence in the quality of a piece of difficult and complex technical work.

Hence, credibility is given to the following reports:

- the original PG&E 2015 seismic hazard (SSHAC) study**
- the PG&E seismic PRA (2018)**
- the new PG&E-supported “updated seismic assessment”**



PART ONE

Independent Peer Review Panel Meeting on May 30, 2024



Independent Peer Review Panel Meeting on May 30, 2024 (Remote)

- IPRP meeting on the PG&E-supported “Updated Seismic Assessment” (“USA”) report mandated by Senate Bill 846
 - Three IPRP members (Gordon Seitz, Philip Johnson, and Rui Chen) made presentations covering various technical topics.
 - Discussion and questioning from other IPRP members.
 - The general tone: the USA represents a good quality report.



Independent Peer Review Panel Meeting on May 30, 2024 **(Continued)**

- Several specific technical issues were raised for which the IPRP resolution awaits their written report.
- IPRP consensus report on the “USA” expected end of June 2024.
- DCISC will review the IPRP report’s positions.



Independent Peer Review Panel Meeting on May 30, 2024 (Continued)

- PG&E Update
 - Review of selected Long-Term Seismic Program (LTSP) activities
- Presentation by Dr. Peter Bird
 - He summarized the technical arguments in three recent declarations.
 - His analyses claim that PG&E has seriously underestimated the likelihood of very large earthquakes.
 - He disagreed with the evaluation of his arguments in the “USA.”
 - No discussion by the IPRP of Bird’s technical arguments, for lack of time.



Independent Peer Review Panel Meeting on May 30, 2024 (Continued)

Committee discussion and public comment



PART TWO

Comprehensive Seismic Safety Update



Comprehensive Seismic Safety Update

- Updated seismic-safety evaluation of the previously approved May 5, 2023 Fact Finding report
- **BACKGROUND: SB846 (in Sept. 2022) directed the DCISC to evaluate seismic safety as to whether important seismic-safety upgrades would be needed.**
- Previous DCCP Seismic Safety Analyses included:
 - 2015 Probabilistic Seismic Hazard Analysis (PSHA)
 - 2018 Seismic Probabilistic Risk Assessment (SPRA)
 - Long-Term Seismic Program (LTSP, ongoing)



Comprehensive Seismic Safety Update

- **What is new since mid-2023?**
 - **SB 846 mandated an “updated seismic assessment,” which was completed in March 2024**
 - **Dr. Peter Bird, working for SLOMFP**
 - **developed alternative interpretations of the overall seismic hazard**
 - **submitted four documents (two to the NRC, one to the CPUC, and a letter to the DCISC.) He believes that PG&E has seriously underestimated the likelihood of very large earthquakes at the DCPD site.**



Comprehensive Seismic Safety Update

- What is new since mid-2023? (*continued*)
 - The IPRP has met and discussed the above two “bulleted” items, although its evaluation report is not yet available.
 - NRC staff wrote an “initial assessment” (in mid-May) of the Bird evaluation as part of an ongoing NRC petition process
 - PG&E submitted a “License Renewal Application” to the NRC in late 2023.
 - The PG&E “Long Term Seismic Program” has continued to perform valuable research and analyses to improve the understanding of the seismic hazard at the DCPD site.



Comprehensive Seismic Safety Update (continued)

- DCISC Findings:
 - SSHAC Level One process (enhanced)
 - The selection of an “enhanced” SSHAC Level One process for this assessment was appropriate.
 - Reason: This was an update of an earlier SSHAC Level Three study.
 - The study was implemented effectively.



Comprehensive Seismic Safety Update (continued)

- DCISC Findings (continued):
 - Seismic Hazard and Site Ground Motion
 - DCCP continues to review all available new information relative to the seismic hazard and site ground motion.
 - **Nothing in the new information changes the broader understandings** of previous seismic studies or provides any new safety insights.



Comprehensive Seismic Safety Update (continued)

- DCISC Findings (continued):
 - In-structure Energy Propagation and Seismic Fragility of Components
 - DCPD considers that models for in-structure energy propagation and the seismic fragility of components and structures remain valid.
 - The methodology that DCPD used for analyzing seismic fragilities is well defined, widely used, very mature, and follows the ASME/ANS PRA standard.
 - **There is nothing new that would modify the previous insights of the most recent SPRA** with regards to in-structure energy propagation or the fragilities of structures and components.



Comprehensive Seismic Safety Update (continued)

- DCISC Findings (continued):
 - Seismic Probabilistic Risk Assessment (SPRA) model:
 - DCPD considers that its SPRA model remains valid.
 - Methodology for the overall SPRA analysis is widely used worldwide, quite mature, and embedded in both international and domestic standards.
 - **There is nothing new with regards to system modeling that would modify the insights** of the most recent SPRA.



Comprehensive Seismic Safety Update (continued)

- Findings and insights from the SB 846–mandated “updated seismic assessment” (USA):
 - **The Hosgri Fault slip rate is believed to be slightly larger than previously thought.**
 - The effect of this is a small increase in the annual rate of large earthquake motion at the DCPD site.
 - The difference is much smaller than the overall uncertainty in the knowledge of that rate.
 - No other aspects of the previous PG&E 2015 PSHA analysis were found to be different enough that the differences would modify the understanding of the seismic performance of the DCPD plant in very large earthquakes. The DCISC agrees with this finding.



Comprehensive Seismic Safety Update (continued)

- Dr. Peter Bird's analyses and conclusions
 - The SB 846-mandated "USA" did a thorough evaluation of Dr. Bird's analyses and found no support.
 - The "USA" was subjected to two outside peer reviews by experts, who concurred in the assessment's findings and did not support Bird's claims.
 - The NRC staff's initial assessment of the Bird evaluation did not find the arguments sufficiently strong as to merit further review.
 - **Based on the above, the DCISC at this time has a strong basis for not accepting Bird's arguments.**



Comprehensive Seismic Safety Update (continued)

- DCISC Findings (continued):
 - Uncertainties:
 - DCCP continues to use new information to refine uncertainties.
 - **The uncertainty analyses are well understood and competently performed.**
 - Other
 - Spent Fuel Pool (SFP) seismic analyses remain valid.
 - The UCLA risk study concluded that SFP seismic risk is very low.
 - The DCISC has identified nothing of seismic-safety importance in PG&E's late-2023 "License Renewal Application".



Comprehensive Seismic Safety Update (continued)

- DCISC Conclusions
 - The 2015 PSHA and the 2018 SPRA were previously reviewed by the DCISC, which concluded that the seismic safety achieved by DCCP was acceptable.
 - The new “USA” has reinforced the previous understanding and not changed our overall safety assessment.
 - The DCISC has concluded that no seismic-safety upgrades or improvements would be needed to support extended operations beyond 2024–2025, if so authorized.



Comprehensive Seismic Safety Update (continued)

- Recommendations for Future Action by the DCISC:
 - The DCISC should review any new seismic-safety-related information from the NRC review of the License Renewal Application.
 - The DCISC should review any future evaluations performed by the NRC, the IPRP, PG&E, or other entities in response to Dr. Peter Bird's analyses of seismic hazard.
 - The DCISC should review any other seismic-safety information that may emerge in the normal course of events.



Comprehensive Seismic Safety Update (continued)

Committee discussion and public comment