Diablo Canyon

Independent

Safety Committee

Public Meeting
June 28 and 29, 2023

Avila Lighthouse Suites

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

1. Meet with DCPP Officer, Site Vice-President Adam Peck
2. September 14, 2022 Emergency Exercise Critique
3. Equipment Long Range Plan Reviews (PMO++)
4. Meet with NRC Senior Resident Inspector
5. Radiation Monitoring and Eagle-21 Systems
6. Switchyard DC Control Power
7. Aging Management Plans for License Renewal
8. Seismic Safety Issues
9. Review of the 2010 Enercon Report on Seismic Vulnerabilities
10. Review of Proposed Changes to NRC Regulation 10 CFR 50.59
11. Maintenance Department Update
12. Observe DCPP Management Review Meeting (Remote)

Meet with DCPP Officer, Site Vice-President Adam Peck

- Discussed the Fact-finding Agenda Items and Other Items of Mutual Interest
- Conclusion – The regular meetings between DCISC and DCPP Officers and Directors continue to be beneficial for both organizations.

September 14, 2022 Emergency Exercise Critique

- DCISC Observed the September 14, 2022 Evaluated Emergency Exercise
- DCPP critique was not ready at the time of the fact-finding meeting, so DCISC reviewed critique at this March 2023 fact-finding meeting.
- Conclusion – DCPP September 14, 2022 emergency exercise critique determined that the exercise was satisfactory overall, meeting all major objectives. The critique was comprehensive and thorough, including many lessons learned for improved future performance. Three gaps to excellence were identified and corrected.

Equipment Long-Range Plan Reviews (PMO++)

- History
  - From 2016 until 2022, DCPP continued to perform all Preventative Maintenance (PM) and Priority 1, 2 and 3 Corrective Maintenance (CM) activities on safety-related equipment, equipment important to safety, and risk-significant equipment.
  - Other PM and CM activities were reviewed (non-safety related, non-risk significant, and Priority 4 and 5 activities) and the scope of some PMs and CMs were reduced or eliminated for 2024/2025 shutdown.
  - Capital projects also reviewed and only projects required for regulatory compliance, safety, or significant reliability improvement were authorized. Most modernization projects cancelled.

(continued)

Equipment Long-Range Plan Reviews (continued)

- Following SB846 Approval – the 'PMO++' Program was initiated:
  - All PM activities and changes made since 2016 were reviewed. About 200 PM plans reinstated, and a small number of new PM plans added. (Program has about 12,000 total PM activities.)
  - All Priority 4 & 5 CM activities were reviewed and about 300 Priority 4 and 5 CM activities reinstated. (Typical backlog of Priority 4 and 5 CM work is about 3,000 items with about 100 CMs being worked per day.)
  - Project review identified about 250 possible projects for consideration of prioritization for implementation during the extension of operations.

(continued)

Equipment Long-Range Plan Reviews (continued)

- Status (March):
  - PM and CM reviews complete.
  - Reviews and refinements of PMO++ project rankings in progress.
  - Preliminary project list completed for Refueling Outage 1R24 (about 12 projects)
  - Two peer reviews of project list planned for May 2023.
  - Independent review required by SB846 – consultants selected; completion expected by October 2023.

(continued)

Equipment Long-Range Plan Reviews (continued)

Conclusion:

The plant PMO++ initiative to evaluate capital projects and plant maintenance activities to support extended operation through 2030 is proceeding satisfactorily. The initiative is expected to be completed in time for the DCISC to complete its review and to develop conclusions at its September 13-14, 2023 Public Meeting, satisfying the California Senate Bill 846 requirement.

Meet with NRC Senior Resident Inspector

The participants discussed the following items:

- Refueling Outage 1R24 to occur in October 2023.
- NRC inspection teams to inspect DCPP's Aging Management Program and PMO++ results.
- An NRC non-cited violation for an incipient fire protection testing problem reported by an employee to NRC as an allegation. (The DCISC reviewed this item at its April 14-15, 2023 Fact-finding Meeting.)

- Conclusion - The meeting with the NRC Senior Resident Inspector was beneficial, and the DCISC should continue the meetings.

Radiation Monitoring and Eagle 21 Systems

- The current 101-channel Radiation Monitoring System is performing satisfactorily with a few exceptions. DCPP plans retain the system for extended operation with selected short-term upgrades.
- Eagle 21, the original Reactor Protection System, is performing satisfactorily and has the benefit of a recent decision by the manufacturer to produce and supply needed replacement parts with a service contract to industry. DCPP plans to maintain its current Eagle 21 system for the extended operation period.
- Conclusion: – DCPP's Radiation Monitoring System and Eagle 21 Reactor Protection System, which are performing satisfactorily, will be retained for extended operations from 2025 to 2030 and possibly beyond. This appeared satisfactory to the DCISC.

DC Control Power for the 230kV and 500kV Switchyards

- 230kV & 500kV switchyards provide emergency offsite electric power
- DC control power for breaker control and communication equipment for both 230kV and 500kV switchyards is provided from the plant vital buses with batteries and battery chargers for backup.
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- Batteries are subject to weekly and quarterly inspections as well as three-to-five-year battery discharge tests.
- Batteries are replaced as determined by inspection or testing results.
- Conclusion: The overall health of the switchyard DC Control System was rated "Acceptable."

Aging Management Plans (AMPs) for License Renewal

- DCPP has a 40-person project team developing AMPs for systems and equipment as required for the License Renewal Application.
- Some existing AMPs were being updated for license renewal, such as the one for NFPA-805, Fire Protection.
- New AMPs were being initiated per NRC regulations, such as Cathodic Protection of Auxiliary Saltwater discharge piping.
- Conclusion – DCPP appeared to be proceeding appropriately in upgrading and adding new Aging Management Plans for systems and equipment for its NRC License Renewal application to be submitted in late 2023. The DCISC will continue to review DCPP's AMPs.

Seismic Safety Issues

- The DCISC's Review of Seismic Safety Under Senate Bill 846
- Expected New Seismic Safety Information
- Senate Bill 846 Requirements Regarding an Updated Seismic Assessment
- FLEX Capabilities Modeled in the Probabilistic Risk Assessment
- Conclusion – At this time, the DCISC concludes that there are no concerns with the adequacy of seismic safety at DCPP. The DCISC will also need to review any new reports and evaluations as they become available, including the contribution of FLEX capabilities to further reduce seismic risk.
- *More current update with May 5, 2023 Fact-finding Report later in PM.*

Review of the 2010 Enercon Report Regarding Seismic Vulnerabilities

- The DCISC review was motivated by a comment from the public at the DCISC February 2023 Public Meeting and a related local news article.
- The Enercon Report focused upon identifying those non-safety related structures, systems, and components (SSCs) that were thought to be most vulnerable to earthquake damage and assessing their seismic capabilities.
- The DCISC purposes in performing this review were 1) to determine whether there were new insights in the Enercon report into the seismic safety of structures or equipment important to safety and 2) to evaluate specific concerns raised by the public as a part of the DCISC's responsibilities for public outreach under its charter.

Continued

Review of the 2010 Enercon Report Regarding Seismic Vulnerabilities, Cont'd

- PG&E seismic experts explained the technical aspects of the Enercon report:
  - How the six buildings had been designed to the seismic building code
  - How the extra margin above the code is understood
  - The code's end-point is generally life safety, not an ability to function later
  - How the Enercon report's quantifications of the likelihood of building failure should be interpreted.

- The report's comparison of the building structures to "soft story" buildings was not technically appropriate. The soft-story description was not an accurate description of the buildings evaluated.

Continued

Review of the 2010 Enercon Report Regarding Seismic Vulnerabilities, Cont'd

- The Appendix to the Enercon Report concluded that all six of the buildings evaluated would have strong seismic performance.
- These buildings are not safety-related and do not contain safety-related or any other plant operating components or operating/emergency personnel. They are "administrative" type buildings. The building code design is to assure personnel safety
- The Enercon report recommended that DCPP evaluate the seismic capacity of the main turbine thrust bearings and upgrade the bearings, if necessary.
- Subsequent review by the thrust bearing manufacturer concluded that the amount of damage would be lower than assumed in the Enercon report and that the subsequent repairs could likely be accomplished in about a month.

Continued

Review of the 2010 Enercon Report Regarding Seismic Vulnerabilities, Cont'd

- Conclusion: DCISC concludes that the performance of non-safety building structures at DCPP during a seismic event lower than the design-basis earthquake would not represent a significant hazard to the safety of the plant or to personnel needed to respond following a seismic event at DCPP. One non-safety item, the main turbine thrust bearings, which are susceptible to earthquake forces, would require about one month to repair, if damaged.

Review of Proposed Changes to NRC Regulation 10 CFR 50.59

- DCPP has implemented the NRC Code of Federal Regulations, 10 CFR 50.59, "Changes, Tests and Experiments."
- DCPP's 10 CFR 50.59 program was integrated in the plant's program for managing the licensing basis: Procedure, "Licensing Basis Impact Evaluations,"
- NRC was considering changes to 10 CFR 50.59 as a risk-informed regulation; however, it was too early in the process for DCPP to become involved.
- Conclusion: The NRC was in the early stages of making risk-informed basis changes to their regulation 10 CFR 50.59, "Changes, Tests, and Experiments." DCPP believed it was too early to get involved in the review process and meanwhile would continue to implement the existing rule.

Maintenance Department Update

- Maintenance performance was rated as Green (good) and stable based on the performance indicators.
- Out of 300 approved (and 270 current) Maintenance positions, 96 would be eligible for retirement in August 2023.
- Maintenance is aggressively hiring all functions due to retirements & license extension.
- Maintenance utilizes an on-site contractor with 45 personnel typically.

- Conclusion: DCPP Maintenance Department overall performance was Green (Good) and stable based on industry performance indicators. Maintenance was aggressively hiring for possible retirements and a possible plant operation extension.

Observe DCPP Management Review Meeting (Remote)

- *"Top-level management review of key indicators, performance indicators, excellence plans and department dashboards that focuses on excellence standards and leadership behaviors to drive sustainable station performance and continuous improvement."*

- Good participation, concise and concrete presentations/explanations, and participants' willingness to accept new action items.

- Conclusion: The March 27, 2023 DCPP Management Review Meeting was effectively facilitated with good participation and a strong focus on excellent performance in operational reliability, event avoidance, and personnel safety.

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Peter Lam, Member, with Richard McWhorter and Ferman Wardell, Consultants

1. Corrective Action Review Board
2. Trends in Plant Status Control Events
3. Equipment Long Range Plan Reviews (PMO++)
4. Licensed Operator Simulator Continuing Training Class Observation
5. Fire Protection Program and Systems
6. Corrective Action Program and Human Performance Update
7. Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector
8. Meet with DCPP Officer
9. Reactivity Management Program
10. Reactor Coolant System
11. Compressed Air Systems

Corrective Action Review Board

- Provides Senior Management Oversight of the Corrective Action Program
- Meeting Focused on Reviewing CAP Program Metrics and Open Items
  - Numbers of Open Notifications
  - Numbers of Notifications Created and Average Age
  - Open Long-term Corrective Action Tasks and Root Cause Evaluation Tasks
  - Etc.
- Conclusion – Meeting effective with good participation. DCISC should observe another meeting in the near future.

Trends in Plant Status Control Events

- Plant Status Control Events refers to events when an operator or technician manipulates the wrong component or places a component in the wrong position
- Performance Issues in 2018/2019; Significant Improvement in 2020/2021
- Good performance since 2021
- In mid-2022, a trend of four low-significance events was identified and corrective actions initiated.
- Conclusion – DCPP's performance in Plant Status Control has been good except for a series of minor events that occurred in late 2022. Although minor, the trend was analyzed and corrected to prevent more significant events.

Equipment Long-Range Plan Reviews (PMO++)

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Equipment Long-Range Plan Reviews (continued)

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  - Project review identified about 250 possible projects for consideration of prioritization for implementation during the extension of operations.

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Equipment Long-Range Plan Reviews (continued)

- Status (April):
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  - Reviews and refinements of project rankings in progress.
  - Preliminary project list completed for Refueling Outage 1R24 (about 12 projects)
  - Two peer reviews of project list planned for May 2023.
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(continued)

Equipment Long-Range Plan Reviews (continued)

- Conclusion:
  - DCPP's process for reviewing the need for changes to Preventive Maintenance activities, Corrective Maintenance activities, and projects to support five years of extended operations (the PMO++ Program) appeared well planned and implemented to date. Final detailed outputs of the process were not yet available for review by the DCISC, and the DCISC should complete those reviews during future Fact-Finding Meetings as soon as the detailed information becomes available (July-August).

Licensed Operator Simulator Continuing Training Class Observation

- Observed two of four short scenarios on Emergency Operating Procedures
- Scenarios:
  - EOP E-0, "Reactor Trip or Safety Injection"
  - EOP FR-S.1, "Response to Nuclear Power Generation Anticipated Transient Without Scram"
  - EOP FR-H.1, "Response to Loss of Secondary Heat Sink"
  - EOP ECA-0.0, "Loss of All AC Power"
- Conclusion – The simulator session was well prepared, contained appropriate objectives, and was professionally conducted. Operators performed well in responding to the simulated off-normal events.

Fire Protection Program and Systems

- Fire Protection Program – Good Health (Green) with one recent non-cited violation from the NRC (reviewed).
- Fire Protection Systems – Good Health with one detection system (Incipient Fire Detection System) in Maintenance Rule (a)(1) status.
- System will be covered by at least three Aging Management Plans
- Conclusion – DCPP's Fire Protection Program and Fire Protection Systems were in good health overall. Minor equipment issues were being appropriately tracked for resolution.

Corrective Action Program and Human Performance Update

- Reviewed the process for Notification submission and review. Approximately 30,000 Notifications submitted annually.
- Reviewed tracking and recent metrics for Notifications.
- Human Performance Events are classified as Station Level Events (SLE, highest), Department Level Events (DLEs), or Organizational Learning Opportunities (OLOs).
- Last SLE in April 2021, Five low-significance DLEs in late 2022
- Overall good performance
- Reviewed error in submitting water quality discharge data to EPA; determined to be of low significance and classified as an OLO.

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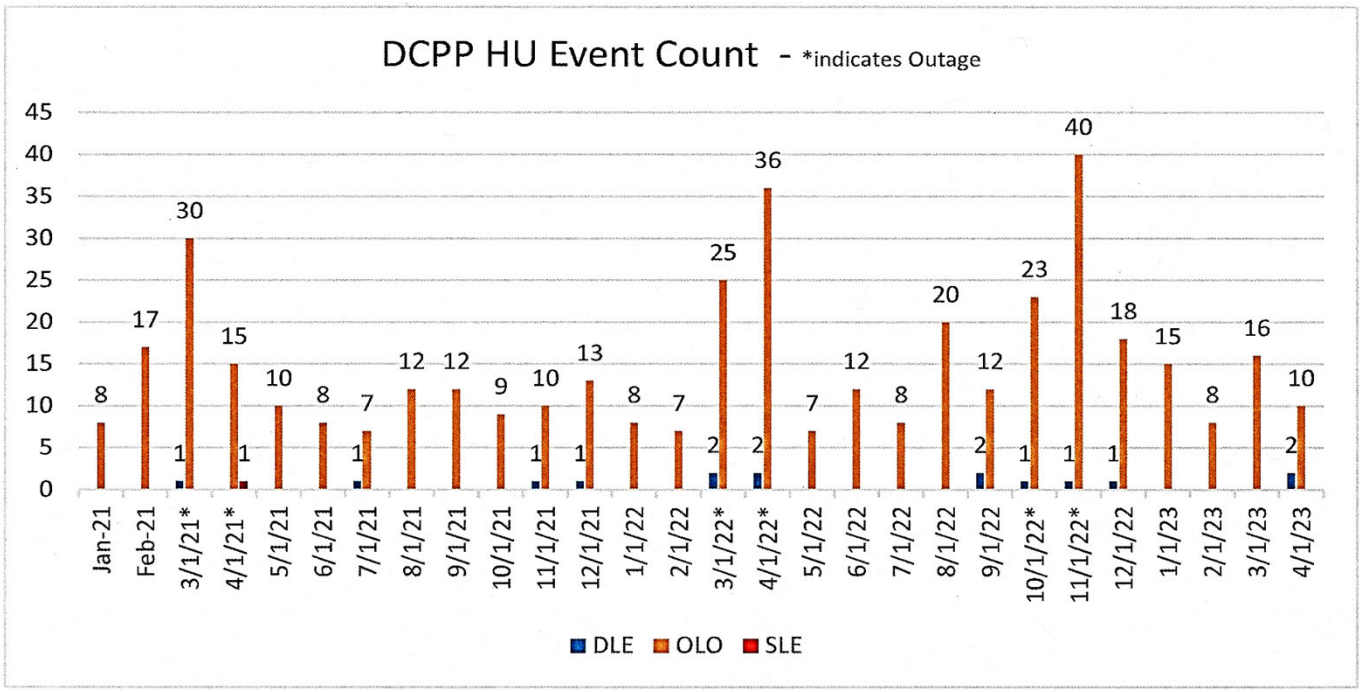
Corrective Action Program and Human Performance Update (continued)



- Conclusion – DCPP's Corrective Action Program was performing well in that issues at the station were being effectively identified, evaluated, and tracked for resolution. DCPP's Human Performance has been excellent over the last two.

Meet with NRC Senior Resident Inspector

- Items Discussed Included:
  - Recent NRC Inspection Activities
  - DCPP's Ongoing Reviews of Corrective Maintenance, Preventive Maintenance, and Projects (the PMO++ Program)
  - License Renewal Inspection Plans
- Conclusion – Meetings continue to be beneficial.

Meet with DCPP Officer

- Maureen Zawalick, Vice President, Decommissioning and Technical Services
- Discussed the Fact-finding Agenda Items and Other Items of Mutual Interest
- Conclusion – The regular meetings between DCISC and DCPP Officers and Directors continue to be beneficial for both organizations.

Reactivity Management Program

- Reactivity is "the fractional change in neutron population from one neutron generation cycle to the next, or the measure of departure from criticality"
- Operations Manager primarily responsible with oversight by Reactivity Management Leadership Team
- Issues/events recorded, tracked and classified by significance.
- Indicators show good performance with no significant Reactivity Management events in last year.
- Conclusion – DCPP has an effective Reactivity Management Program which ensures conservative reactivity management by promoting a reactivity-conscious culture. Program Performance Indicators showed a low occurrence and significance of Reactivity Management events for the past 12 months.

Reactor Coolant System

- Both units' systems classified as Green (Healthy) with issues being tracked for resolution.
- Reviewed several past issues discussed in previous DCISC Fact-Finding Meetings to learn how being evaluated in light of extended operations.
- Reviewed the status of Reactor Vessel weld coupons for Unit 1. Plan to pull remaining coupon in Refueling Outage 1R24 (October 2023).
- Conclusion – DCPP's Reactor Coolant System health was rated as Green (Healthy) with several minor issues being tracked for resolution in the Corrective Action System. The DCISC should follow up on the status of reviews for actions being considered under the PMO++ Program to address several long-term issues.

Compressed Air Systems

- Two subsystems – Instrument Air and Service Air.
- Generally a Class 2 system that can be important to safety. Portions of the IA subsystem are safety related w/local backup accumulators.
- Long-standing project to replace all seven Plant Air Compressors completed in 2022.
- Minor equipment issues being tracked for resolution.
- Conclusion – DCPP's Compressed Air Systems were operating well to supply clean and dry air to plant equipment with minor issues being tracked for resolution in the Corrective Action Program. A long-term project to replace all seven of the plant's Instrument Air Compressors was successfully completed.

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Per Peterson, Member, with Ferman Wardell and Richard McWhorter, Consultants

1. Radiation Monitoring System
2. Buried Piping and Tanks Program
3. Refueling Outage 1R24
4. Equipment Reliability Program
5. Non-Licensed Operator Training
6. FLEX and Probabilistic Risk Assessment
7. Meet with DCPP Officer
8. PMO++ Process and Results
9. License Renewal Application and Aging Management Plans
10. Industry Efforts to Evaluate the Radiological Consequences of a Release of Radionuclides from a Crack in a Spent Fuel Storage Cask
11. Workplace Seismic Safety
12. Local NRC Meeting on DCPP Regulatory Performance and License Renewal

Radiation Monitoring System (RMS)

- The RMS provides general area and process system radioactivity measurements and alarms, as well as automatic line isolations, to monitor and control personnel dose exposure and control the release of radioactive fluids in compliance with applicable regulations and plant Technical Specifications.
- It consists of 101 channels of radiation detectors located around the plant and associated electronic components, as well as wiring and displays located in the Control Room and other areas of the plant.
- DCPP reported the system was rated as "Good and Improving." The primary measure of health is the number of Maintenance Rule Functional Failures (MRFFs), which have been trending downward.

Continued

Radiation Monitoring System (RMS) (Continued)

- Conclusion: The DCPP Radiation Monitoring System health was considered "Good and Improving" with several of its subsystems having minor problems. These subsystems are being considered for selective replacement with the PMO++ process based on needs for life extension through 2030 and beyond. This process is expected to conclude in the second quarter of 2023. The DCISC is following the progress of this process and will report on it in future fact-finding meeting.

Buried Piping and Tanks Program (BP&T)

- BP&T Program: provide increased assurance of structural and leakage integrity of buried piping and tanks.
- Safety-related systems and tanks and piping containing radioactive or environmentally hazardous material (Auxiliary Saltwater, Condensate Polishing, Liquid Radwaste, Diesel Fuel Oil, Oily Water & Turbine Sump)
- DCPP Procedure TS5.ID3, "Buried Piping and Tanks Program" was satisfactory.
- Aging Management Plans were being developed for License Renewal.

- Conclusion: DCPP's Buried Pipe and Tanks Program health was White due to new program owner. All other measures were all Green. DCISC will follow.

Refueling Outage 1R24

- Outage to occur Fall 2023
- Implementation of modifications, maintenance and inspections needed to support NRC License Renewal and extended operation to 2030
- Removal of reactor vessel coupon for analyzing vessel fracture toughness to avoid the possibility of pressurized thermal shock induced failures
- Inspections:
  - Steam Generator primary and secondary tube and vessel
  - Auxiliary Saltwater System (ASW) internal and external piping
  - Buried fire water piping
  - Makeup water buried piping

Continued

Refueling Outage 1R24 (Continued)

- Example Modifications:
  - Condenser water box and tube sheet coatings
  - New offsite power transformers
  - PMO++ focus area improvements
  - Improvements to Intake traveling screens
  - Improvements to Reactor Vessel Level Indication System
  - Improvements to the Rod Control System

- Conclusions: DCPP was satisfactorily planning and preparing for Refueling Outage 1R24 scheduled to occur Fall 2023. This is an important outage because new modifications, maintenance activities, and inspections will be implemented for NRC License Renewal and extension of operations. Also, removing reactor vessel material coupon for analysis of vessel fracture toughness. DCISC will review the detailed outage scope and outage safety plan.

Equipment Reliability (ER)

- DCPP classifies its equipment into several categories for purposes of ER measures and actions:
  - Class 1 is safety-related equipment
  - Classes 2 and 3 are non-safety-related equipment important for power production and environmental protection
  - Equipment included in the NRC Maintenance Rule (MR) program.
- In August 2022, the DCPP Quarterly ER Performance Index was Yellow for Unit 1 and Green for Unit 2.
- In the latest Index ER had improved to "Green with a stable trajectory."

- Conclusion: DCPP's Equipment Reliability performance has improved substantially since 2021 and 2022, and its health has improved to Green (Good) and stable.

Observe Non-Licensed Operator Training

- Non-Licensed Operator training module "Main Generator Hydrogen (H_2) and Carbon Dioxide (CO_2) System."
- The DCISC was provided with the course lesson guide, which was comprehensive and well written.
- The instructor appeared knowledgeable and effective in explaining the system and involving the students with questions and examples. The course materials were good. The students appeared interested and involved.

- Conclusion: The DCPP Non-Licensed Operator training class on the Main Generator Hydrogen (H_2) and Carbon Dioxide (CO_2) System appeared satisfactory and effective.

FLEX and Probabilistic Risk Analysis

- (FLEX is not an acronym but describes a strategy to provide diverse and flexible coping strategies and portable equipment to address the loss of safety-related systems due to beyond design basis events.)
- One FLEX Strategy was included in the plant PRA for steps that could be taken inside the plant to tie Direct Current (DC) Busses together in order to extend the life of batteries to supply control power to the Turbine-Driven Auxiliary Feedwater Pump for greater than 24 hours during a Loss of All AC Power (offsite and onsite) event.
- PRA analyses typically only allow consideration of Phase 1 FLEX Strategies, which resources inside the plant protected area, focusing on guiding operators to complete tasks inside the plant that were above and beyond responses typical to events in the plant's design basis.

Continued

FLEX and Probabilistic Risk Analysis, (Continued)

- The particular FLEX Strategy was chosen for inclusion into the PRA because it provided a substantial reduction in calculated risk and used only actions that could be completed with high confidence in the expected situation and time period.
- Conclusion: A single FLEX Strategy was incorporated into DCPP's Probabilistic Risk Assessment (PRA) analysis of a greater than Design Basis Earthquake with loss of AC power. Because the PRA considers the first 24 hours of an event, and FLEX equipment is assumed not available for 24 hours, thus FLEX is not typically useful in PRA analyses. The DCISC should also review post-earthquake procedures for the fire department and for security personnel with respect to FLEX equipment and plant access.

Meet with DCPP Officer

- The DCISC FFT met with Maureen Zawalick, Vice-President, Business and Technical Services, to discuss items from this fact-finding meeting and other topics of interest.

- Conclusion: The regular meetings between DCISC Members and DCPP Officers and Directors continue to be beneficial for both organizations.

PMO++ Process and Results

- From the signing of the Joint Proposal in 2016 until the passage of Senate Bill 846 (SB846) in 2022, DCPP continued to perform all safety-related Preventive Maintenance (PM) Corrective Maintenance (CM) activities.
- DCPP chose to eliminate or reduce the scope of non-safety related/non-risk significant PMs and Priority 4 and 5 CMs which were not needed to support operations through the then planned cessation of power operations in 2025.
- Following the passage of SB846, DCPP initiated its current effort to review the long-range maintenance and project plans for station equipment. The new effort was named PMO++.

Continued

PMO++ Process and Results, (Continued)

The PMO++ Program began in December 2022 with initial reviews completed by the end of January 2023. A cross-functional team reviewed a comprehensive list of documents including the following:

- Corrective Maintenance
- Preventive Maintenance
- Surveillance Tests
- License Renewal/Aging Management Programs
- Inventories of Critical Spares and Repair Parts Equivalency Evaluations
- Modifications and Design Changes
- End of Life Grace Periods (pre-determined, pre-approved extensions)
- Cognitive Trending via Corrective Action Notifications and Interviews

Continued

PMO++ Process and Results, (Continued)

- DCPP expects about 50 projects to be completed within the next three years with about 12 of those 50 being performed during the upcoming Refueling Outage 1R24 in the fall of 2023. On the independent review of "deferred maintenance" required by SB846, consultants had recently been selected to perform the review. DCPP expected the SB846 independent review would be completed by October 2023.
- Conclusions: DCPP's process for reviewing the need for changes to Preventive Maintenance, Corrective Maintenance, and projects to support five years of extended operations (PMO++) appeared well planned and implemented. Final detailed outputs are expected to be available for review by the DCISC in July and/or August, permitting DCISC's conclusions and recommendations to be ready for approval at its September 2023 Public Meeting.

License Renewal Application and Aging Management Plans

- DCPP has a 40-person project team developing AMPs for systems and equipment as required for the License Renewal Application.
- Some existing AMPs were being updated for license renewal, such as the one for NFPA-805, Fire Protection.
- New AMPs were being initiated per NRC regulations, such as Cathodic Protection of Auxiliary Saltwater discharge piping.
- Conclusion - DCPP appeared to be proceeding appropriately in upgrading and adding new Aging Management Plans for systems and equipment for its NRC License Renewal application to be submitted in late 2023. The DCISC will continue to review DCPP's AMPs.

Industry Efforts to Evaluate the Radiological Consequences of a Release of Radionuclides from a Crack in a Spent Fuel Storage Cask

Conclusion: An industry study to analyze the dose consequences for a hypothetical through-wall crack of a spent fuel storage container was delayed until at least 2025 in order to obtain additional research data from the Department of Energy. The DCISC should continue to monitor the status of the study and review the final report after its issuance.

Workplace Seismic Safety

- DCPP's "Standards for Bracing Office Furniture, Cabinets, and Storage Racks Revision 2 (1/30/2020)" appeared satisfactory.

- FFT tour of the Maintenance Training Building observing tall furniture, shelves, cabinets, etc. that had the potential to fall on personnel or block passageways in the event of an earthquake. All items observed were either properly attached to walls or had bottom weighting.

- Conclusion: Offices, classrooms and shops in DCPP's Maintenance Training Building had the proper anchoring or bottom weighting of tall furniture to assure personnel safety in the event of earthquakes.

Local NRC Meeting on DCPP Regulatory Performance and License Renewal

- NRC described their regulations and regulatory process for inspecting and evaluating nuclear plant performance. They reported that DCPP performance for the 2022 cycle was at the top of the performance scale.

- NRC described their regulations and process for nuclear plant license renewal, which is for 20 additional years. PG&E personnel described plans submit their application for License Renewal to NRC by the end of 2023. Many local organizations and individuals spoke, and most speakers favored license extension.

- Conclusions: The local NRC meeting on May 3, 2023 in San Luis Obispo was informative on NRC regulations, regulatory process, and license renewal. Many local organizations and individuals spoke in favor of license extension.

Per Peterson, Member, with Ferman Wardell and Richard McWhorter, Consultants

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Diablo Canyon Power Plant

License Renewal Application

Presented by

June 28, 2023

PHILIPPE SOENEN, Director, Strategic Initiatives

Overview

- Background and Updates Since February DCISC Meeting
- License Renewal (LR) Application (LRA) Preparation Status
- LR Implementation Activities
- Interactions with the Nuclear Regulatory Commission (NRC)

Background: Prior to February DCISC Meeting

- **October 2022 PG&E Submittal to Nuclear Regulatory Commission (NRC) (ML22304A691)**
  - PG&E requested the NRC Staff resume review of the license renewal (LR) application (LRA) as it existed in 2016
  - If the request to resume review of the DCPP LRA was not granted, PG&E requested an exemption from 10 CFR 2.109(b) to ensure DCPP can continue to operate while the LRA is under review
- **January 24, 2023 NRC Response (ML22343A179)**
  - Clarifies the regulatory path regarding the DCPP LRA by requiring PG&E submit a new LRA, while allowing PG&E to leverage previously reviewed work

NRC License Renewal Approach Updates Since February

- **March 2, 2023 Exemption Granted (ML23026A102)**
  - NRC granted an exemption from the timely renewal application requirement
  - Conditioned upon PG&E submitting a timely LRA by December 31, 2023
- **Path Ahead**
  - PG&E plans to submit a new LRA by December 31, 2023

DCPP License Renewal Application Preparation

- **A new LRA is being developed using the latest NRC guidance**
  - Complete update of safety portion of the LRA, including:
    - Aging Management Programs (AMPs)
    - Technical analyses
  - Complete update of the environmental portion of the LRA
- **Independent Oversight of new LR-Related Activities**
  - Independent entities have been engaged to provide assessments of LR activities, including:
    - Nuclear Safety Oversight Committee, Internal Audits, Diablo Canyon Quality Verification, STARS Alliance, and Industry Experts

LR Implementation Summary

- **PG&E is planning to implement the LR commitments at the earliest opportunity**
  - Extensive planning is necessary to ensure safe and effective implementation, including training, procurement, and development of work packages
  - PG&E is already proactively taking actions to ensure ongoing safety during continued operations
    - Developed a process for license renewal implementation before new LRA submittal (e.g., procedural controls, work tracking, planning)
    - Conducting early inspections for license renewal programs
- **NRC has an onsite presence at DCPP including during the LRA review period and will retain its authority to conduct all regulatory activities associated with licensing, inspection, and oversight**

DCPP License Renewal Commitment Implementation

Nov 2024: Period of Timely Renewal Begins for Unit 1

2023	2024	2025	2026	2027	2028	2029	2030

82% LR commitments implemented

Recurring inspections continue

Additional **11%** Unit 2-specific commitments implemented

Recurring inspections continue

Remaining **7%** of commitments have program implemented

Remaining **7%** of commitments have associated initial inspections/modifications completed

Recurring inspections continue

NRC oversight and on-site presence; existing inspection/maintenance activities continue

Unit 1
PTR Begins
82%
Cmplt

Unit 2
PTR Begins
93%
Cmplt

PTR: period of timely renewal
LR: License Renewal

NRC's Request for Information: LR Implementation

- **NRC requested PG&E provide information regarding LR implementation efforts**
- **PG&E responded on March 17th (ML23076A210) with the following:**
  - List of aging management program (AMP) inspections planned for upcoming Unit 1 refueling outage starting in October 2023
  - Updated commitment implementation schedule, being used for planning purposes, for the commitments included in the withdrawn LRA
    - Proactively implementing AMPs and commitments included in the DCPP LRA at the time of withdrawal
    - Differences will be reconciled as the new LRA is developed/submitted to NRC
    - PG&E currently has no formal commitments on the docket with the NRC for LR

Response to NRC's Request for Information

- **PG&E proposed implementation details for 5 of the 71 commitments** **(commitments PG&E had made at the time of withdrawal)**
  - Require extensive planning and preparations prior to execution
  - Existing operating programs or other aging management activities will provide reasonable assurance the systems are adequately managed during the implementation period
  - PG&E is planning to implement the commitments at the earliest opportunity at which they can be performed consistent with industry standards and NRC expectations for management of shutdown risk through outage planning, personnel training, and procurement of necessary materials
  - PG&E's proposed implementation plan presents no significant risk to public health and safety or the environment

Ongoing Interactions with NRC

- **NRC has held two public meetings to discuss PG&E's LRA**
  - December 8, 2022: discussed overall LRA approach
    - Use of the latest NRC guidance
    - Reflecting the current DCPP licensing basis and design
  - May 24, 2023: proposed due dates for commitments in the new DCPP LRA
- **NRC plans to continue having public meetings with PG&E and public participation as needed prior to the new LRA submittal**
- **PG&E will continue to respond to NRC correspondence related to DCPP LR**
- **PG&E will support NRC inspections and audits of LR activities**
  - NRC plans to conduct inspection of LR activities during the upcoming Fall 2023 refueling outage

Key Take-aways: License Renewal Status

- The NRC granted PG&E an exemption that supports submittal of a new DCPP LRA by December 31, 2023
- PG&E is on-track in developing the new LRA
- PG&E continues to have dialogue with NRC via correspondence and public meetings
- PG&E is taking proactive steps to ensure safe continued operations

Thank You

Philippe Soenen,
Strategic Initiatives Director

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

This Presentation is in Two Parts

1. Independent Peer Review Panel Meeting on May 5, 2023

2. Comprehensive Seismic Safety Update

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

Part One

Independent Peer Review Panel Meeting on May 5, 2023

Independent Peer Review Panel Meeting on May 5, 2023 (Remote)

- IPRP Comments and Questions on the DCISC's Seismic Safety Assessment Contained in the November Fact-Finding Report
  - On May 4, the IPRP released a document with comments and questions for the DCISC based on their review of the November 2022 report.
  - Dr. Budnitz responded to several comments and questions. Examples:
    - IPRP comment on DCISC scope
    - IPRP comment on whether DCISC uses NRC safety criteria
    - IPRP comment on whether DCISC uses the original seismic design criteria

Independent Peer Review Panel Meeting on May 5, 2023 (Remote)

- Dr. Budnitz proposed that the DCISC supplement the November report to provide more detail, references, and further explanations as necessary.

- Following the IPRP meeting, the DCISC approved the creation of an additional Fact-Finding Report as discussed during the IPRP meeting (an administrative action).

Independent Peer Review Panel Meeting on May 5, 2023 (Remote)

- Electric Power Research Institute's recent project regarding the seismic performance of equipment not covered by NRC regulations.

- PG&E Update
  - Review of Selected Long-Term Seismic Program (LTSP) Activities
  - Review of Initial Lessons-Learned from Turkey/Syria Earthquake
  - Recent SLOMFP Filing of a Declaration from Dr. Peter Bird

Independent Peer Review Panel Meeting on May 5, 2023 (Remote)

Committee discussion and public comment

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

Part Two

Comprehensive Seismic Safety Update

Comprehensive Seismic Safety Update

- Updated the seismic-safety section from the November 2022 Fact-Finding Report.
- **SB846 directed the DCISC to review and evaluate seismic safety in the context of whether important seismic-safety upgrades would be needed.**
- Previous DCPP Seismic Safety Analyses included:
  - 2015 Probabilistic Seismic Hazard Analysis (PSHA)
  - 2018 Seismic Probabilistic Rick Assessment (SPRA)
  - Long-Term Seismic Program (LTSP, ongoing)

Comprehensive Seismic Safety Update (continued)

- DCISC Findings:
  - Seismic Hazard and Site Ground Motion
    - DCPP continues to develop new information relative to refining the understanding of the seismic hazard and site ground motion.
    - **Nothing in any of 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
    - DCPP considers that models for in-structure energy propagation and the seismic fragility of components and structures remain valid.
    - The methodology that DCPP 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):
  - SPRA Model:
    - DCPP 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)

- DCISC Findings (continued):
  - Uncertainties:
    - DCPP 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.
    - UCLA risk study concluded SFP seismic risk very low.
    - 2018 'Mitigating Strategies Assessment' found that no upgrades were needed.

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 DCPP was acceptable.
  - After reviewing the new and updated information, **the DCISC concludes that the seismic safety of the DCPP reactors is fully adequate now, and requires no additional upgrades or other changes to bring it up-to-date or to improve it.**
  - **The DCISC concludes that no upgrades or improvements to seismic safety would be necessary to assure adequate safety for extended operations beyond 2025.**

Comprehensive Seismic Safety Update (continued)

- Recommendations for Future Action by the DCISC:
  - The DCISC should review any new seismic-related information that could be forthcoming when PG&E submits a new (updated) License Renewal Application to the NRC at the end of 2023.
  - The DCISC should review the seismic-safety review that PG&E will conduct as required by California legislation SB846.
  - The DCISC should review any analyses that may be performed by the NRC or other entities in response to the May 2, 2023, SLOMFP filing with the NRC claiming that PG&E has underestimated the seismic hazard at DCPP.

Comprehensive Seismic Safety Update (continued)

Committee discussion and public comment

Long-Range Planning

Diablo Canyon Power Plant

Michael Jackson
Director, Nuclear Projects

June 28, 2023

Diablo Canyon Power Plant Maintenance

- At Diablo Canyon Power Plant (DCPP) all necessary investments and maintenance to ensure safe and reliable operations has and continues to be performed, including continued 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, maintenance activities at DCPP are reviewed by independent committees

Equipment and System Health Reviews

- Life cycle management plans at DCPP originally correlated with the end-of-license dates of 2024/2025.

- A holistic review was done which thoroughly evaluated equipment for continued operations. The work identified by these reviews support license renewal and ensures equipment reliability for our customers and the state of California.

- 11 Projects are included in the 1R24 Refueling Outage and 2R24 Refueling Outage Projects are in process with scope identification and planning.

Long-Range Planning Reviews

- In May 2023, the Institute of Nuclear Power Operations (INPO) and the Strategic Teaming and Resource Sharing (STARS) Alliance performed reviews of long-range planning efforts with no gaps or deficiencies identified.

- Currently a SB846 mandated independent review is in progress with no gaps or deficiencies identified at this time.

- These reviews and input provided will support our focus to maintain the plant to the highest standards and will ensure we meet all additional regulations and requirements to support extended operations.

Thank you

Michael Jackson
Director, Nuclear Projects

Diablo Canyon Power Plant: State of the Plant Update

Dennis Petersen
Station Director
June 29, 2023

Station Update

Station Update

Plant Operation

- Units 1 & 2 are safely operating at 100% power with a Probabilistic Risk Assessment (PRA) of “Green”
- All NRC Performance Indicators (PIs) are Green

Station Update

Diesel Generator (DG) Maintenance in 2023

- ✓ May DG 1-3 - Complete
- June DG 1-1
- August DG 1-2

Unit 1 Refueling Outage (1R24) – Fall 2023

Station Update

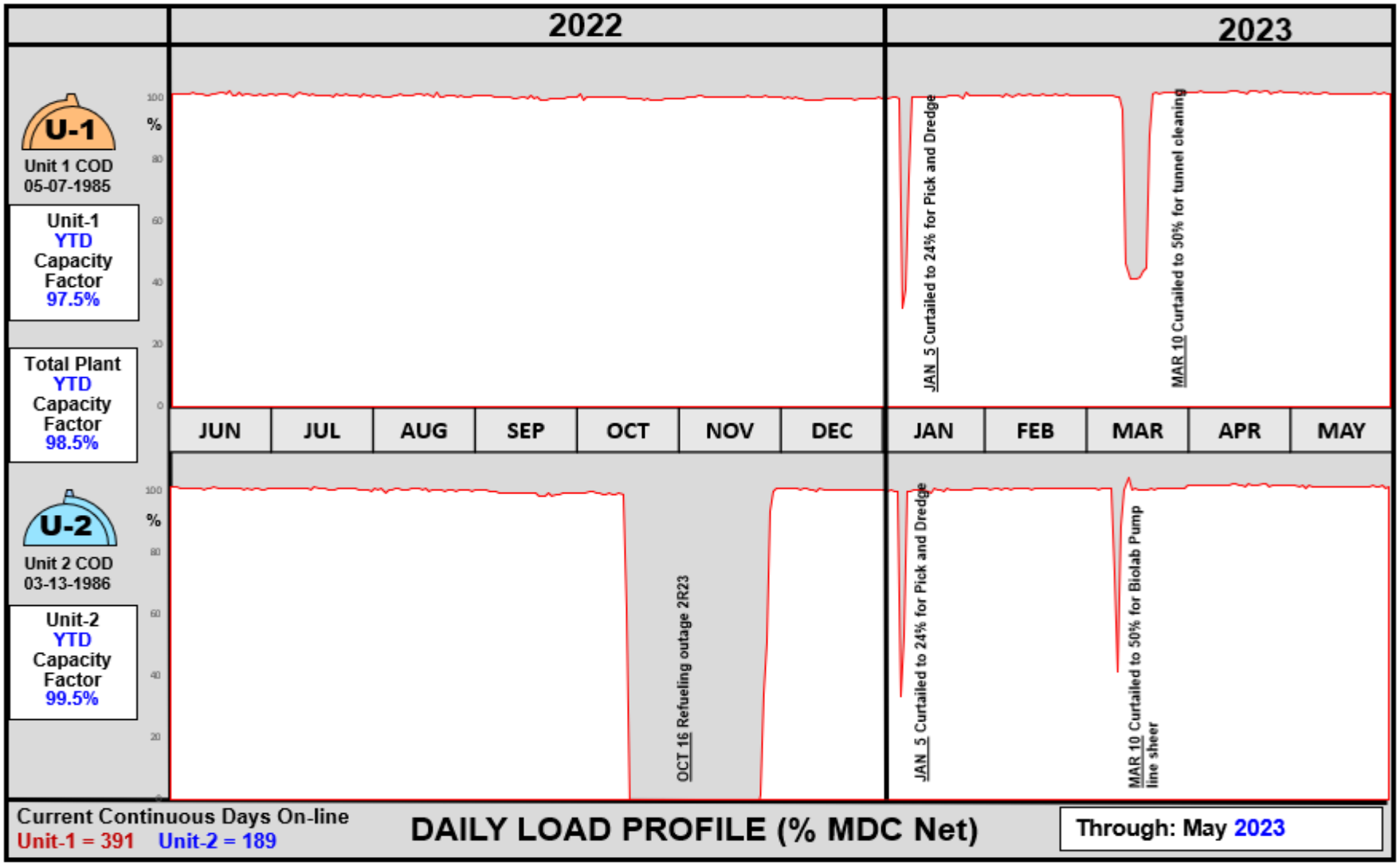
June 1, 2023 – Employee Safety Keys to Life Expo

June 6-8, 2023 – Nuclear Regulatory Commission (NRC) Licensed Operator Requalification Inspection

June 8, 2023 – Outage Hiring & Information Fair

June 21-22, 2023 – PG&E Safety Excellence Management System (PSEMS) Pre-Assessment

Diablo Canyon Power Plant
Daily Load Profile: Past 12 Months
Daily Capacity Factor Power History Curves



Station Update

Upcoming Station Activities

Nuclear Safety Oversight Committee (NSOC) Site Visit

- July 10-13

Upcoming NRC Inspections and License Renewal Inspections

- NRC Fitness For Duty Inspection – July 2023
- NRC License Class Exam – August 2023
- NRC Emergency Preparedness – September 2023
- License Renewal Inspections (1R24 Refueling Outage) – October 2023
- NRC Radiation Protection – October 2023
- NRC Cyber Security – November 2023

Thank You

Dennis Petersen,
Diablo Canyon Power Plant
Station Director

DCPP Regulatory Performance Update

Jordan Tyman
Director, Risk and Compliance

June 29, 2023

DCPP Performance Summary

February 2023 – June 2023

- 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
- No violations have been received since the last DCISC update
- DCPP remains in the highest performance category for all NRC Performance Indicators

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
- The NRC gauges licensee performance using 16 separate indicators related to various aspects of plant operation
- The NRC's annual assessment letter (March 1, 2023) concluded that "overall performance at your plant preserved public health and safety" and remained in the highest performance category of the NRC's Reactor Oversight Process Action Matrix, because "all inspection findings had very low safety significance (i.e., Green), and all performance indicators were within the expected range (i.e., Green)."

Regulatory Update

February 2023 – June 2023

NRC Violations

- No violations of more than very low safety significance have been received since the last DCISC update.

Licensee Event Reports

- No Licensee Event Reports (LERs) have been submitted since the last DCISC meeting.

DCPP Regulatory Performance Summary

February 2023 – June 2023

- DCPP remains in the highest NRC regulatory performance category
- No violations have been received since the last DCISC update
- DCPP continues to provide safe, clean, and reliable electricity to Californians

Upcoming Inspections

Upcoming NRC Inspections and License Renewal Inspections

- NRC Fitness For Duty Inspection – July 2023
- NRC License Class Exam – August 2023
- NRC Emergency Preparedness – September 2023
- License Renewal Inspections (1R24 Refueling Outage) – October 2023
- NRC Radiation Protection – October 2023
- NRC Cyber Security – November 2023

Thank you

Jordan Tyman
Director, Risk and Compliance

1R24
Refueling Outage

Erik Werner
Outage Director
June 29, 2023

1R24 Preview

Summary

- Diablo Canyon Unit 1 twenty fourth refueling outage (1R24) will be in Fall 2023
- Fifty-day planned outage based on scope from license renewal required inspections, planned maintenance, and refueling activities
- Approximately 1,000 temporary additional workers are expected to support 1R24

1R24 Goals

Performance Area	Goal
Safety	Zero Serious Injury or Fatality (SIF) events Zero Nuclear Safety – No loss of decay heat removal
Human Performance	Zero Site Clock Resets Zero Significant Foreign Material Exclusion (FME) Events
Outage Duration	≤ 50 Days
Dose Goal	TBD (As Low as Reasonably Achievable)
Reliability	Power Ascension ≤ 5 days Reliability ≥ 90 days max capable power

1R24 Major Scope - Primary

Primary Base Scope

- Reactor Coolant System Drain Down
- Two Reactor Coolant Pump Seal Replacements
- Motor Operated and Air Operated Valve Maintenance
- Steam Generator Eddy Current Testing, Steam Drum and Secondary Side Inspection Activities
- Two Containment Fan Cooler Unit Motor Overhauls

1R24 Major Scope - Primary

Primary License Renewal Inspection Activities

- Refueling Water Storage Tank Inspection
- Containment Building Inspection
- Reactor Vessel Capsule B Removal

Primary Project Scope

- Replace Reactor Vessel Level Instrumentation System Bellows and O-Rings

1R24 Major Scope - Secondary

Secondary Base Scope

- High Pressure Main Turbine Inspection and Valve Maintenance
- One Main Feedwater Pump Inspection
- Feedwater Heater and Moisture Separator Reheater Internal Inspections
- One Auxiliary Saltwater Pump Motor and Pump Replacement
- One Circulating Water Pump Motor Overhaul
- One Condensate Booster Pump Motor Overhaul

1R24 Major Scope - Secondary

Secondary License Renewal Inspection Activities

- Condensate Storage Tank Internal Inspection
- Condensate Polisher Demineralizer Vessel Internal Inspections
- Diesel Fuel Oil Storage Tank Internal Inspections
- Intake and Discharge Structure/Conduit Inspections

1R24 Major Scope - Secondary

Secondary Project Scope

- Intake Travelling Screen Frame Replacements
- Main Condenser Maintenance Activities
- One Condensate Booster Pump Pedestal Replacement
- One Diesel Fuel Oil Storage Tank Overfill Protection Device Replacement

1R24 Major Scope - Electrical

Electrical Base Scope

- Vital Bus 4kV and 480v Bus Maintenance
- 12kV Bus Breaker Racking Mechanism Overhauls
- Startup Transformer Load-Tap Changer Overhaul
- Electrical Bus Duct Inspections
- Main and Auxiliary Transformer Power Factor Testing

1R24 Major Scope - Electrical

Electrical License Renewal Inspection Activities

- 4kV Vital Bus Power Supply to Loads Cable Testing
- 480V Cable Testing
- Cable Pull Box Inspections

Electrical Project Scope

- Circulating Water Pump Neutral Winding Relocation
- Transformer Refurbishment

Thank you

Erik Werner
Outage Director

Diablo Canyon Power Plant

Spent Fuel Management and Decommissioning Planning

Presented by

June 29, 2023

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

Spent Fuel Management

Background

- **PG&E safely stores spent fuel at the Diablo Canyon Independent Spent Fuel Storage Installation (DC ISFSI)**
  - Currently employ 58 Holtec HI-STORM 100SA systems

- **In 2022, PG&E entered into contract with Orano to employ their NUHOMS® Extended Optimized Storage (EOS) system during decommissioning**

Conceptual Layout

Current Holtec Dry Cask Storage Systems

Conceptual Orano Dry Cask Storage Systems for Decommissioning

Near Term Activities

- **In response to enactment of Senate Bill (SB) 846:**
  - A spent fuel offload campaign is required prior to the period of extended operations
  - Supports ability to offload full reactor cores
  - Holtec will support PG&E for an offload campaign in 2024
  - Subsequent offload campaigns will be completed to support continued operations

Orano System Implementation Status Update

- **Updates since February 2023 DCISC meeting:**
  - On May 12, the California Coastal Commission approved amending the existing DC ISFSI coastal development permit to facilitate implementation of the Orano system.
    - Amended permit not yet issued.
  - Continuing site-specific engineering analyses (2022 – 2024).
  - NRC is continuing their review of the Orano license amendment request submitted to NRC in Q4 2022 (requests increase in heat loads/assembly).

Orano System Implementation Status Update

- **Orano system implementation include modification to the ISFSI pads:**

Key Take-aways: Spent Fuel Management

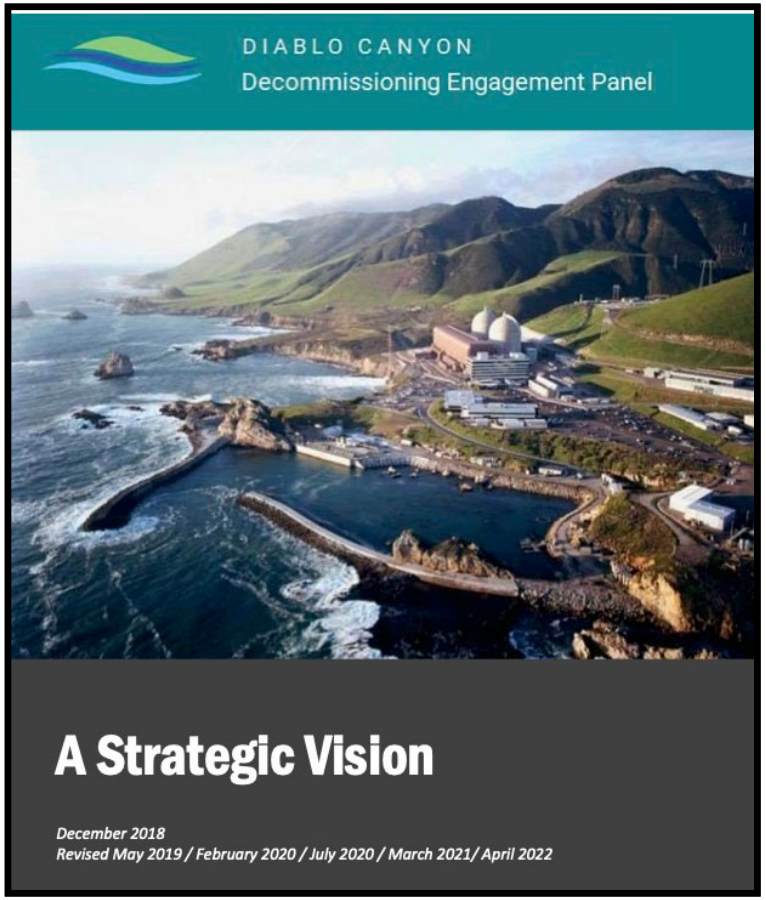
- Spent fuel management plans were affected by SB 846 that was enacted to preserve the option for extend operations of DCPP
- A spent fuel offload campaign will be safely completed prior to the period of extended operations
- PG&E continues planning and implementation activities to successfully support safe spent fuel management regardless of when DCPP permanently shuts down

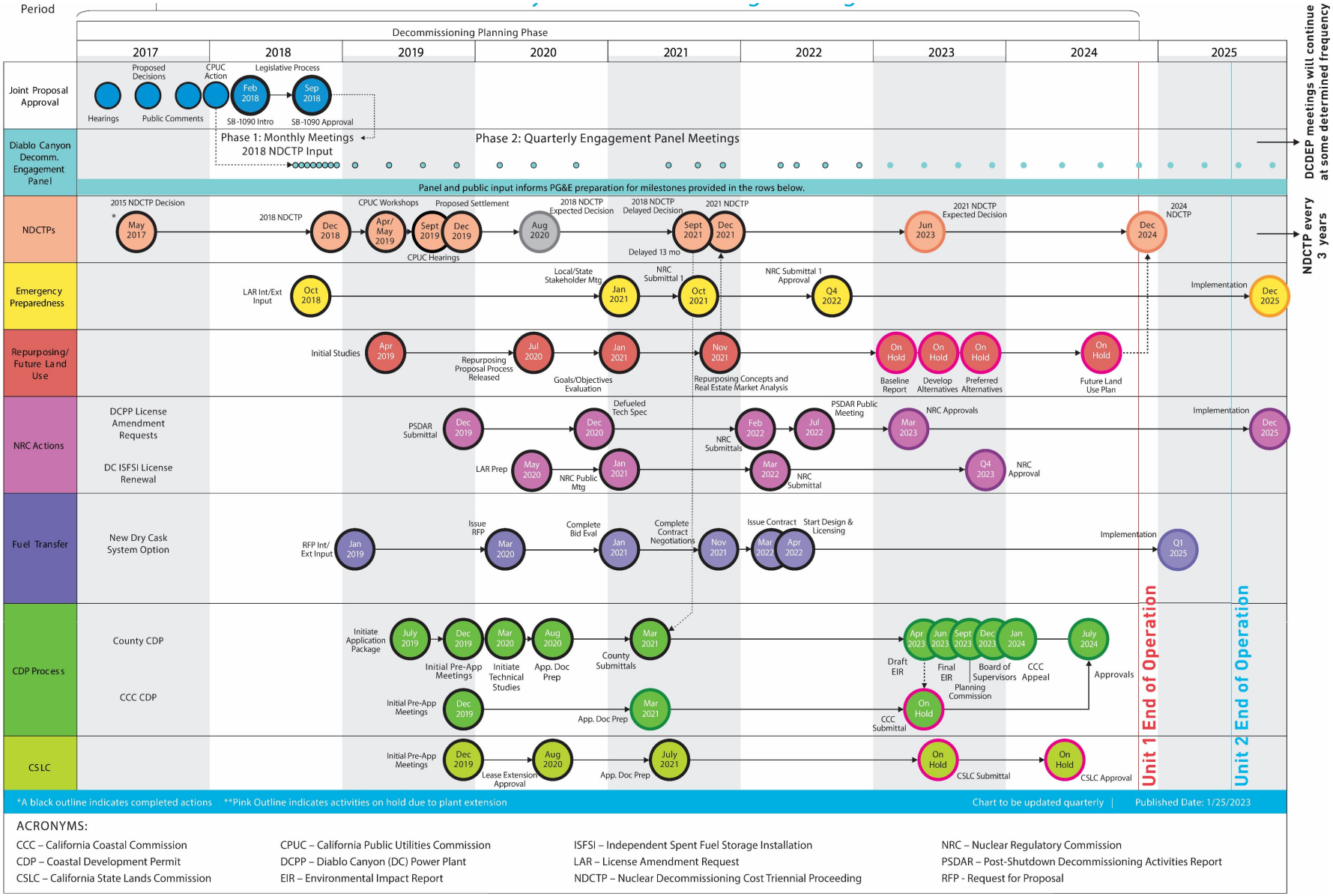
Decommissioning Planning Continues

Decommissioning Planning Continues

Focusing on pre-2024 activities needed to ensure smooth transition into decommissioning

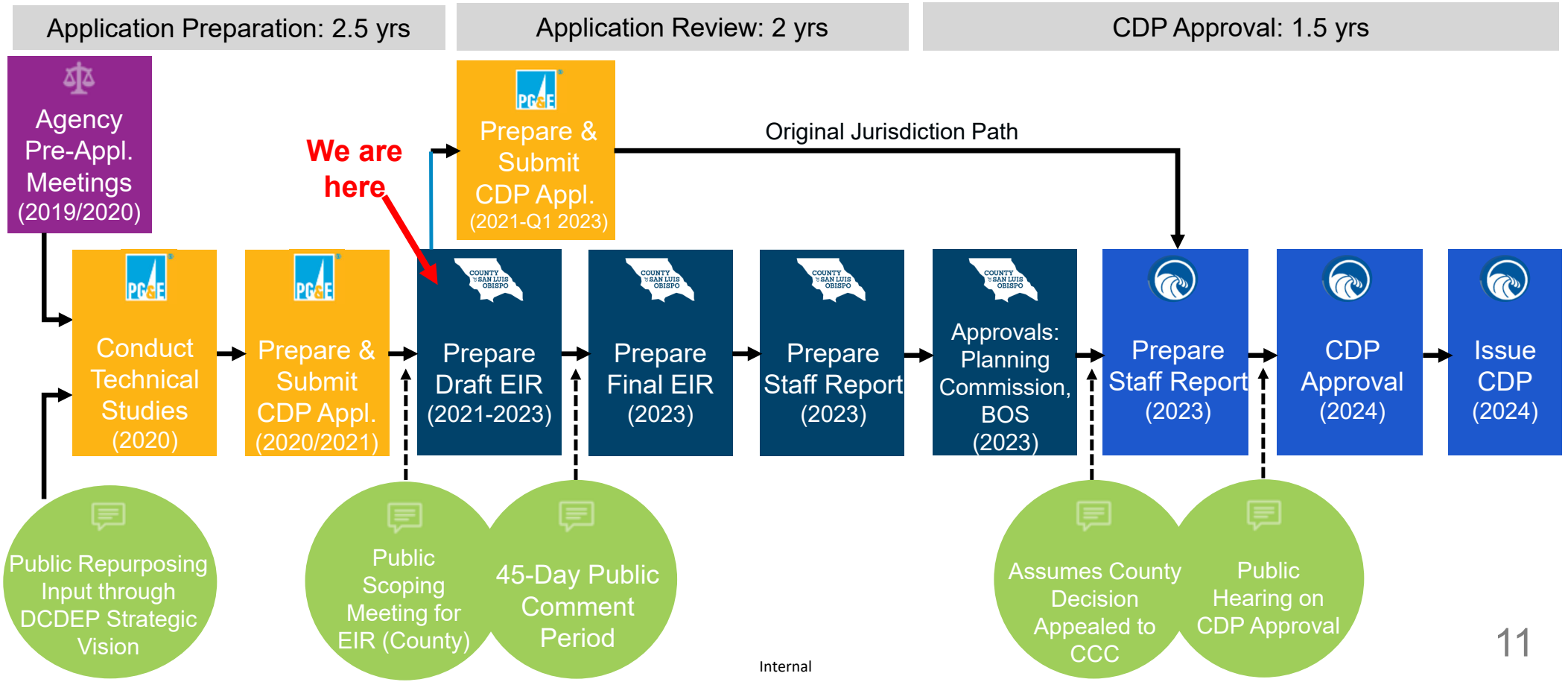
- DCDEP
- Repurposing and future land use process
- Decommissioning program development
  - Procedure revisions
- Licensing approvals (addressed in later slides)
- Permitting approvals (addressed in later slides)



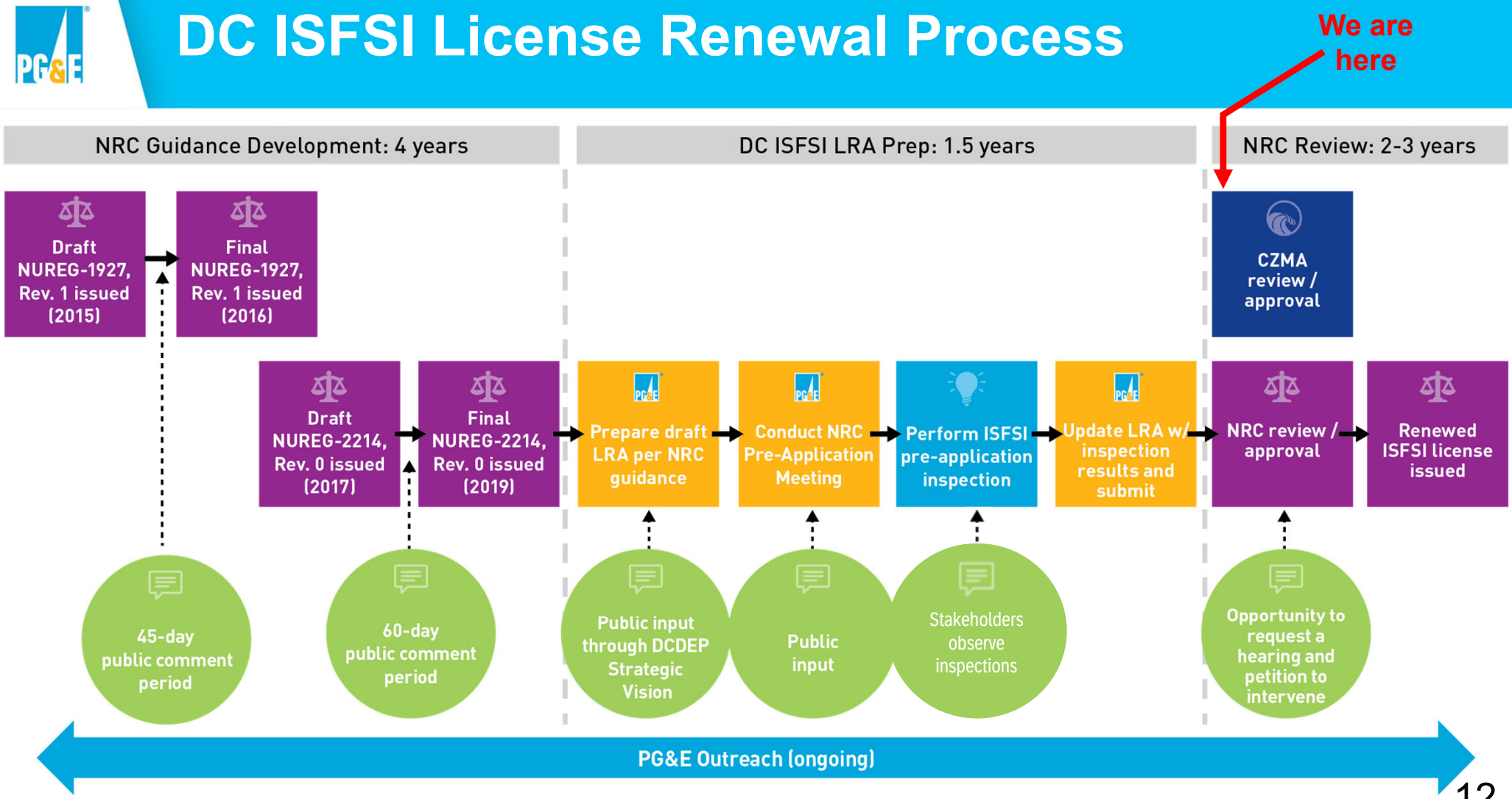

Licensing Actions
Permitting Actions
Period
Decommissioning Planning Phase
2017
2018
2019
2020
2021
2022
2023
2024
2025
Joint Proposal Approval
Hearings
Proposed Decisions
Public Comments
CPUC Action
Feb 2018
SB-1090 Intro
Legislative Process
Sep 2018
SB-1090 Approval
Diablo Canyon Decomm. Engagement Panel
Phase 1: Monthly Meetings
2018 NDCTP Input
Phase 2: Quarterly Engagement Panel Meetings
DCDEP meetings will continue at some determined frequency
Panel and public input informs PG&E preparation for milestones provided in the rows below.
NDCTPs
2015 NDCTP Decision
May 2017
2018 NDCTP
Dec 2018
CPUC Workshops
Apr/ May 2019
Proposed Settlement
Sept 2019
Dec 2019
CPUC Hearings
Aug 2020
2018 NDCTP Expected Decision
2018 NDCTP Delayed Decision
Delayed 13 mo
Sept 2021
2021 NDCTP
Dec 2021
Jun 2023
2021 NDCTP Expected Decision
Dec 2024
2024 NDCTP
NDCTP every 3 years
Emergency Preparedness
LAR Int/Ext Input
Oct 2018
Local/State Stakeholder Mtg
Jan 2021
NRC Submittal 1
Oct 2021
NRC Submittal 1 Approval
Q4 2022
Implementation
Dec 2025
Repurposing/ Future Land Use
Initial Studies
Apr 2019
Repurposing Proposal Process Released
Jul 2020
Goals/Objectives Evaluation
Jan 2021
Nov 2021
Repurposing Concepts and Real Estate Market Analysis
On Hold
Baseline Report
Develop Alternatives
Preferred Alternatives
Future Land Use Plan
NRC Actions
DCPP License Amendment Requests
DC ISFSI License Renewal
PSDAR Submittal
Dec 2019
Defueled Tech Spec
Dec 2020
NRC Submittals
Feb 2022
Jul 2022
PSDAR Public Meeting
Mar 2023
NRC Approvals
Implementation
Dec 2025
LAR Prep
May 2020
NRC Public Mtg
Jan 2021
Mar 2022
NRC Submittal
Q4 2023
NRC Approval
Fuel Transfer
New Dry Cask System Option
RFP Int/ Ext Input
Jan 2019
Issue RFP
Mar 2020
Complete Bid Eval
Jan 2021
Complete Contract Negotiations
Nov 2021
Issue Contract
Start Design & Licensing
Mar 2022
Apr 2022
Implementation
Q1 2025
CDP Process
County CDP
Initiate Application Package
July 2019
Dec 2019
Initial Pre-App Meetings
Mar 2020
Initiate Technical Studies
Aug 2020
App. Doc Prep
Mar 2021
County Submittals
Apr 2023
Draft EIR
Jun 2023
Final EIR
Sept 2023
Planning Commission
Dec 2023
Board of Supervisors
Jan 2024
CCC Appeal
July 2024
Approvals
CCC CDP
Initial Pre-App Meetings
Dec 2019
App. Doc Prep
Mar 2021
CCC Submittal
On Hold
CSLC
Initial Pre-App Meetings
Dec 2019
Lease Extension Approval
Aug 2020
App. Doc Prep
July 2021
On Hold
CSLC Submittal
On Hold
CSLC Approval
Unit 1 End of Operation
Unit 2 End of Operation
*A black outline indicates completed actions
**Pink Outline indicates activities on hold due to plant extension
Chart to be updated quarterly
Published Date: 1/25/2023
ACRONYMS:
CCC – California Coastal Commission
CDP – Coastal Development Permit
CSLC – California State Lands Commission
CPUC – California Public Utilities Commission
DCPP – Diablo Canyon (DC) Power Plant
EIR – Environmental Impact Report
ISFSI – Independent Spent Fuel Storage Installation
LAR – License Amendment Request
NDCTP – Nuclear Decommissioning Cost Triennial Proceeding
NRC – Nuclear Regulatory Commission
PSDAR – Post-Shutdown Decommissioning Activities Report
RFP - Request for Proposal

Coastal Development Permit Review

BOS: Board of Supervisors
CCC: California Coastal Commission
CDP: Coastal Development Permit
DCDEP: Diablo Canyon Decommissioning Engagement Panel
EIR: Environmental Impact Report



DC ISFSI License Renewal Process



DCDEP: Diablo Canyon Decommissioning Engagement Panel

Nuclear Regulatory Commission Review

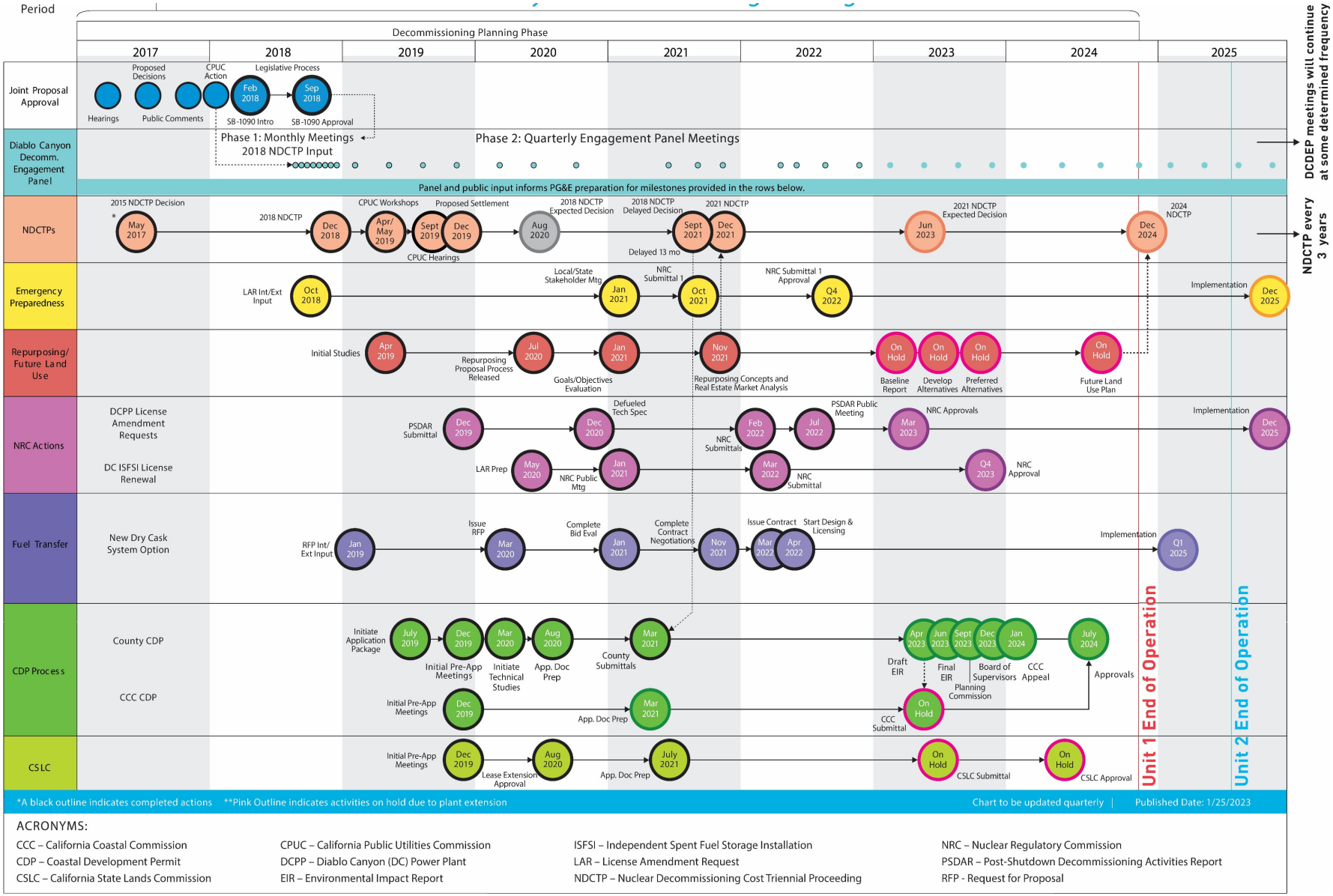
- **DC ISFSI License Renewal Application (LRA) submitted to NRC on March 9, 2022 – publicly available at ML22068A189**
  - **NRC approval would result in DC ISFSI licensed through March 2064**
- **NRC's Sufficiency Review**
  - **Completed; documented in NRC letter dated Sep 13, 2022**
- **NRC's Detailed Review – ongoing**
  - **Safety and environmental reviews ensure structures and components can safely perform as intended for an additional 40 years**

Decommissioning Licensing Actions

- **NRC licensing approvals received in Q1 2023**
  - **Certified Fuel Handler Training and Retraining Program**

- **NRC issued the Post-Shutdown Decommissioning Activity Report (PSDAR) Assessment Letter in June 2023**

NDCTPs



ACRONYMS:

CCC – California Coastal Commission
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CSLC – California State Lands Commission
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DCPP – Diablo Canyon (DC) Power Plant
EIR – Environmental Impact Report
ISFSI – Independent Spent Fuel Storage Installation
LAR – License Amendment Request
NDCTP – Nuclear Decommissioning Cost Triennial Proceeding
NRC – Nuclear Regulatory Commission
PSDAR – Post-Shutdown Decommissioning Activities Report
RFP - Request for Proposal

2021 NDCTP

- **Submitted the 2021 Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) to CPUC in Dec 2021**

- **Proceeding schedule is set by the assigned CPUC Administrative Law Judge**
  - ✓Intervenor and Rebuttal Testimony completed in Q2 2022
  - ✓Settlement negotiations were completed in December 2022
  - ✓Evidentiary hearings completed in November 2022
  - CPUC decision anticipated in 2023

SB-846 Decommissioning Requirements

- **Continue the triennial NDCTP proceedings as the venue in which the CPUC reviews and approves:**
  - DCPP decommissioning cost estimate
  - After the fact reasonableness review of amounts already spent on decommissioning planning and/or decommissioning
- **CPUC opened Order Instituting Ratemaking (R.23-01-007)**
  - Addresses additional decommissioning planning costs resulting from the license renewal applications or license renewals
  - To be recovered on a non-bypassable basis from customers of all load serving entities subject to the CPUC's jurisdiction

Key Take-aways: Decommissioning Planning Path

- **Regulatory approvals are being sought early to support transition into decommissioning**
  - Based on lessons learned from the industry (including San Onofre)
  - Schedule also informed by PG&E's previous permits and licensing activities
- **Early planning results in cost savings (i.e., preservation of the decommissioning trusts)**
- **Key permitting and licensing actions are on track for completion prior to permanent shutdown**
- **California Public Utilities Commission (CPUC) funding of $3.9 billion (2017$) greatly reduces project and schedule risk**

Thank you

Tom Jones
Senior Director, Regulatory, Environmental, and Repurposing

Diablo Canyon Power Plant

Updates on Reactor Vessel Integrity Analyses

Presented by

June 29, 2023

PHILIPPE SOENEN, Director, Strategic Initiatives

Overview

- **Background**
- **Reactor Vessel Surveillance Coupon Withdrawal Plans**
  - Request for Nuclear Regulatory Commission (NRC) Approval of Withdrawal Schedule
- **Updated Reactor Vessel Integrity Analyses to Support License Renewal (LR)**

Background

- **Federal regulations require all US operating reactors to have a Reactor Vessel Material Surveillance Program**
  - To monitor vessel material changes over time through periodic withdrawal and testing of surveillance capsules installed in the reactor vessels to ensure safe operations
- **Reactor Vessel Material Surveillance Program requirements for the current 40-yr operating period have been satisfied for Units 1 and 2** [see ML120330497]
  - Coupon withdrawal and testing to-date has demonstrated that the reactor vessels for both Units 1 and 2 currently meet the NRC's acceptance criteria (10 CFR 50.61)

Background

- **For license renewal, PG&E is required to continue the Reactor Vessel Material Surveillance Program**
  - Confirms reactor vessel surveillance data meets acceptance criteria for 60 years of operation
- **PG&E provided necessary information in the original license renewal application (LRA) that was withdrawn in 2018**
  - DCISC previously independently reviewed this information and included its conclusions in the 21st Annual Report, Section 4.23.2

Reactor Vessel Surveillance Coupon Withdrawal Plans

- **Unit 2 reactor vessel coupons have all been withdrawn**
  - Data was used in original LRA to demonstrate acceptability through 60 years of operation
- **Unit 1 reactor vessel coupons**
  - Data was used in original LRA to demonstrate acceptability through 60 years of operation
  - LRA credited withdrawing one final coupon to support the up to 60 years of DCPP operations and to benefit the industry for more than 60 years of operations
    - PG&E plans to retrieve the Unit 1 coupon in the Fall 2023 or Spring 2025 refueling outages (~96-101 Effective Full Power Years)
    - On May 15, 2023, PG&E submitted a request to NRC to approve the above Unit 1 coupon withdrawal schedule [ML23135A217]

Reactor Vessel Surveillance Coupon Withdrawal Plans

- **As required by 10 CFR 50, Appendix H:**
  - Withdrawn Unit 1 coupon will be tested and analyzed
  - Results will be submitted to NRC within 18 months after withdrawal
  - PG&E will continue to use its separate ex-vessel monitoring dosimetry to characterize the neutron environment

Updated Reactor Vessel Integrity Analyses

- **Data was used in original LRA to demonstrate acceptability for both Units 1 and 2 through 60 years of operation**
- **As part of NRC's review of the new LRA, PG&E will provide new analyses for Units 1 and 2**
  - Radiation exposure projections for 60 years
  - Pressurized thermal shock (PTS) / adjusted reference temperature (ART) evaluation
  - Pressure-temperature (P-T) limit curve evaluation
  - Low temperature overpressure (LTOP) setpoint evaluation
  - Upper shelf energy (USE) evaluation
- **NRC will independently review the new analyses**

Key Take-aways

- PG&E is planning to obtain NRC approval to withdrawal one reactor vessel surveillance coupon for testing to support 60 years of operation
- PG&E is conducting new reactor vessel integrity analyses to support review of the new LRA
- NRC will independently review the reports to determine whether both DCPP reactor vessels are safe for 60 years of operation

Thank You

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