Diablo Canyon Power Plant TSTF-505 Revision 2 License Amendment Request

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June 26, 2023

Purpose and Desired Outcomes

Purpose

- Discuss the PG&E planned TSTF-505 Revision 2 LAR for Diablo Canyon Power Plant (DCPP)

Desired Outcomes

- Provide details regarding the License Amendment Request (LAR) contents and planned implementation schedule

Introduction

Pacific Gas and Electric Company (PG&E) owns and operates Diablo Canyon Power Plant (DCPP) and is committed to safely and reliably operating the state's largest clean energy producer on behalf of all Californians.

- DCPP had been slated for closure at expiration of current operating licenses (2024 and 2025)
- In 2022, the State of California (CA) directed PG&E to take steps to relicense DCPP for an additional 5 years to ensure statewide electrical grid reliability as additional clean energy resources are brought online
- PG&E intends to apply for renewed licenses from the NRC by December 2023
- Proposed License Amendment Request presents a set of risk-informed alternative timelines for resolving low-risk equipment issues when operable, redundant components are available
- If approved, the change will prevent unnecessary unit shutdowns for low-risk scenarios, and is consistent with safely maintaining DCPP generation and supporting electrical grid reliability in CA

Agenda

- LAR scope and schedule
- Summary of the DCPP probabilistic risk assessment (PRA) model
- Implementation of risk-informed extended completion times (CTs)
- Staff Feedback

LAR Scope and Schedule

PG&E plans to submit LAR for NRC approved TSTF-505 Revision 2

- Scope of the LAR includes most systems and components contained in TSTF-505 Revision 2; no systems outside scope of TSTF-505 will be included
- TS 3.3.1 Reactor Trip System, TS 3.3.2 Engineered Safeguards Features, and TS 3.3.5 Loss-of-Power Diesel Generator Start changes will not be included
  - Simplifies LAR review scope
  - The TS 3.3.1/3.3.2/3.3.5 systems may be addressed by a future LAR
- Shutdown modes will not be included in the LAR scope (no plant specific shutdown model at this time)

LAR Scope and Schedule

Scope

TS 3.4.9 – Pressurizer
TS 3.4.11 – Pressurizer Power Operated Relief Valves (PORVs)
TS 3.5.2 – ECCS [emergency core cooling systems] - Operating
TS 3.6.2 – Containment Air Locks
TS 3.6.3 – Containment Isolation Valves
TS 3.6.6 – Containment Spray (CS) System, Containment Fan Cooler Units (CFCUs)
TS 3.7.2 – Main Steam Isolation Valves (MSIVs)
TS 3.7.4 – 10% Atmospheric Dump Valves
TS 3.7.5 – Auxiliary Feedwater (AFW) System
TS 3.7.7 – Vital Component Cooling Water (CCW) System
TS 3.7.8 – Auxiliary Saltwater System (ASW)
TS 3.8.1 – AC [alternating current] Sources – Operating
TS 3.8.4 – DC [direct current] Sources – Operating
TS 3.8.7 – Inverters – Operating
TS 3.8.9 – Distribution Systems – Operating

LAR Scope and Schedule

Scope

- Additional information is being added to the LAR to address Requests for Additional Information (RAI) received for other plant applications in the last several years
  - “Generic RAI” information identified in TSTF-505 Revision 2
  - Additional justification for select Required Actions in TSTF-505 Revision 2
  - Surrogates for containment isolation, pressurizer heaters
  - Justification for containment spray functions
  - Two Steam Generator Atmospheric Dump Valve Conditions not in scope based on Steam Generator Tube Rupture mitigation requirements

LAR Scope and Schedule

Scope

- Non-editorial TSTF-505 variations are included:
  - Deletion of expired Conditions and Required Actions
  - LCO 3.5.2 (ECCS) and 3.6.6 (Containment Cooling) extended CTs eliminated
  - Plant-Specific Conditions which are not a loss of function are included:
    - LCO 3.6.6 Condition D for CFCUs – one CS train and at least 2 CFCUs operable
    - LCO 3.7.5 Condition C for AFW – one Motor Driven train and one Turbine Driven steam supply inoperable
    - LCO 3.8.1 Condition F for diesel generator (DG) fuel oil transfer system – separate Condition for DG support system

LAR Scope and Schedule

Schedule

- PG&E plans to submit the LAR in July 2023 and request approval within 12 months
- Changes in NRC-approved TSTF-505 improve the capability for DCPP to support CA grid reliability

Summary of the DCPP PRA model

PRA Model

- Current model consists of Internal Events, Internal Flooding, Seismic, and Fire
- PRA Technical Adequacy
  - PRA technical adequacy is consistent with Regulatory Guide (RG) 1.200 Revision 2
  - Diablo PRA is Capability Category II per ASME/ANS standard and RG 1.200 R2
  - PRA model is under configuration control with approved procedures for periodic and immediate updating
- PG&E is completing final activities to close remaining open peer review findings/observations (F&Os) prior to LAR submittal
- National Fire Protection Association (NFPA) NFPA-805 approved in April 2016
- No changes to the Seismic PRA Model are needed in support of this LAR

Summary of the DCPP PRA model

PRA Model

- Seismic PRA Model
  - RG 1.200, Revision 2 peer reviewed in 2017
  - Seismic F&Os closed in 2018
  - Seismic PRA results submitted to NRC as part of 50.54(f) Fukushima Response
  - PG&E maintains a Long-Term Seismic Program (LTSP) for Diablo Canyon comprised of a geosciences team who partners with independent seismic experts to evaluate regional geology and global seismic and tsunami events to ensure the facility remains safe
  - Extensive scientific re-evaluations performed continue to show that DCPP can safely withstand earthquakes, tsunamis and flooding that could potentially occur in the region

Summary of the DCPP PRA model

RICT Program Implementation

- Riskman software used for PRA quantification and model development
- EPRI Phoenix will be used for Risk-informed Completion Time (RICT)/Risk Management Action Time calculations
- Software tools and procedures will ensure compliance with requirements
- Risk-informed TS Completion Time processes to be structured similar to South Texas Project (Operations/Work Control centered)
- Organization specific training and communication plan established to appropriately train plant staff

Staff Feedback