

DCISC Post-Shutdown Planning

- Review Second Restated Charter
- Overview of Phases and Timeline Between Unit Shutdowns and All Fuel Moved to ISFSI
- Review Previous Post-Shutdown Roles Matrix in View of Timeline and DCISC Amended Charter
- Review of Possible Modifications to Open Items List for Post-Shutdown Use
- Suggested Steps Forward



DCISC Post-Shutdown – Second Restated Charter

I.A.(1) – Safety of operations shall mean activities in connection with generation of electricity by Diablo Canyon and/or the operation of the Diablo Canyon Spent Fuel Pools and related support systems and the Diablo Canyon Independent Spent Fuel Storage Installation (ISFSI), including the transport of nuclear fuel to and from Diablo Canyon's Spent Fuel Pools and the storage of nuclear fuel within the Spent Fuel Pools and the transport and storage of nuclear fuel to and within the ISFSI or elsewhere at Diablo Canyon.



DCISC Post-Shutdown – Second Restated Charter (Con't)

II.F.(2) – The Committee shall undertake outreach concerning matters within its purview with other review committees established by the CPUC (e.g., the Independent Peer Review Panel for Seismic Studies at Diablo Canyon Power Plant) and by PG&E (e.g., the Diablo Canyon Decommissioning Engagement Panel) including, but not limited to, providing advanced copies of its public meeting agendas and, upon request, copies of its non-confidential documents and reports.

III.(1) – The Committee will terminate its review of safety of operations upon further order of the CPUC or upon the date of successful completion of the transfer of all nuclear fuel from both Diablo Canyon Spent Fuel Pools to the ISFSI.

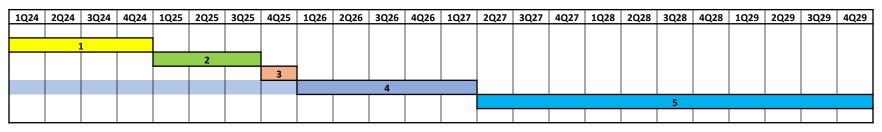
DCISC Post-Shutdown – Phases and Timeline

Phases

Phase	1	2	3	4	5	6
Approximate Timeframe	Until Unit 1 Shutdown November 2, 2024	November 2, 2024 Until Unit 2 Shutdown August 26, 2025	September 2025	September 2025 to Early 2027	Early 2027 to Late 2029	Beyond 2029
Plant Conditions	Two Units Operating	Fuel Removal from U1 One Unit Defueled One Unit Operating	Fuel Removal from U2 Final Transfers into SFPs	Fuel in ISFSI and SFP Risk of Zr Fire	Fuel in ISFSI and SFP No Risk of Zr Fire Cask Loadings/Transfers *	All Fuel at ISFSI
Emergency Plan		Current Emergency Plan			utdown ncy Plan	ISFSI-Only Emergency Plan

^{*} Cask Loadings/Transfers Could Possibly Begin in Phase 4

Timeline of Phases



-----> Assumes Four-year Period for Offload to ISFSI



DCISC Post-Shutdown – Previous Roles Matrix

			Phases Following Cessation of C	Operations	
		Phase A (New 2 & 3)	Phase B <i>(New 4 & 5)</i>	Phase C (N/A)	Phase D (N/A)
			Fuel Removed from Both Reactors. (2025)		
	Plant Status →	Reactors Shutdown with Fuel	Spent Fuel Pools Operational.		
		Remaining in Reactors.	Decommissioning in Progress	Spent Fuel Pools	Decommissioning
		Spent Fuel Pools Operational.	ISFSI Operational	Empty	Complete.
	Areas for DCISC Review ↓	Limited Decommissioning	Cask Loadings and Transfers	Decommissioning in Progress.	ISFSI Operational and/or spent fuel
	Aleas for DCISC Review \$	ISFSI Operational	DCISC Oversight Ends when SFPs Empty (~2029)	ISFSI Operational	being shipped from site
1	Health of Safety Systems	All Systems*	SFP-Related Systems	No	No
2	Health of Electrical and Other Supporting Systems	All Systems*	SFP-Related Systems	No	No
3	Operator Staffing, Training, and Licensing	Yes	Yes; Limited to Fuel Handlers	No	No
4	Regulatory Compliance	Yes	Yes; for ISFSI/SFP	TBD** No	No
5	Offsite Emergency Preparedness	Yes	Yes; Phased Reduction	TBD** No	No
6	Quality Verification and Related Activities	Yes	ISFSI/SFP-Related Systems	No	No
7	Engineering & Other Programs	Yes	ISFSI/SFP-Related Systems	No	No
8	Human Performance	Yes	Yes; Limited to ISFSI/SFP Operations	No	No
9	Performance Improvement and Corrective Action Programs	Yes	Yes; Limited to ISFSI/SFP Operations	TBD** No	No
10	Fire Protection	Yes	SFP-Related Systems	No	No
11	Beyond Design Basis & FLEX	Yes	SFP-Related Systems	No	No



DCISC Post-Shutdown – Previous Roles Matrix (Continued)

		Phases Following Cessation of Operations					
		Phase A (New 2 & 3)	Phase B <i>(New 4 & 5)</i>	Phase C (N/A)	Phase D (N/A)		
			Fuel Removed from Both Reactors. (2025)				
	Plant Status →	Reactors Shutdown with Fuel	Spent Fuel Pools Operational.				
		Remaining in Reactors. Spent Fuel Pools Operational.	Decommissioning in Progress ISFSI Operational	Spent Fuel Pools Empty	Decommissioning Complete.		
		Limited Decommissioning	Cask Loadings and Transfers	Decommissioning in Progress.	ISFSI Operational and/or spent fuel		
	Areas for DCISC Review ↓	ISFSI Operational	DCISC Oversight Ends when SFPs Empty (~2029)	ISFSI Operational	being shipped from site		
12	ISFSI Operations	Yes	Yes	TBD** No	No		
13	ISFSI Storage Cask Aging Management	Yes	Yes	TBD** No	No		
14	Management of Risk from External Hazards	Yes	ISFSI/SFP-Related Systems	TBD** No	No		
15	Decommissioning Planning and Execution	Yes	SFP-Related Systems	No	No		
16	Nuclear Safety Culture and Employee Concerns Programs	Yes	Yes; Limited	TBD** No	No		
17	Radiological Protection and Health Physics, including Worker Radiation Safety and Annual Reports	Yes	Yes; Limited to ISFSI/SFP Operations	TBD** No	No		
18	Interface Between Security and Safety	Yes	Yes, Limited to ISFSI/SFP Operations	TBD** No	No		
19	Plans and Execution of Spent Fuel Shipments Departing DCPP for Long- Term Storage or Disposal	No	No	No	No		



DCISC Post-Shutdown – Future Open Items List

Open Item Type: M= Monitor F= Follow-up I= Issue

ITEM NO.	TYPE	OPEN ITEM CATEGORY/DESCRIPTION	Last Actions	Next Action
CO.		Conduct of Operations (CO)	Actions	Action
CO-7	М	Review DCPP storm response experience and strategy every two years [or as necessary] during or after annual winter storm season.	5/17FF 3/21FF	As necessary
CO-8	М	Monitor all reactor trips – automatic and manual – and forced outages. (review trip LERs at public meetings).	8/20FF 11/20FF 1/21FF	Post-trip FFs & PMs
CO-9	F	Reactivity Management for SFP operations – review every 18 months.	List at end of OIL	Regularly 4Q22FF
CO-10	М	Mispositioning Errors (Equipment Status for SFP operations)—monitor the status of mispositioning errors and actions to resolve.	4/20FF 7/20FF 12/20FF	12/21FF
CO-11	М	Operator concerns and issues – review periodically the status of operator concerns and issues.	12/18FF 4/20FF 5/21FF	3Q22FF
CO-13	М	Review any implementations of the CAISO load following policy that result in DCPP transients. Review any initiatives to operate DCPP in different modes, such as load following due to renewable energy fluctuations, during its final years of operation. Include 230kV voltage stability issues.	5/19FF 12/19FF	12/21FF As necessary
CO-14	F	The DCISC team found the operator (fuel handlers) retention project to be effectively managed but the Committee should follow this issue closely with reference to licensed operators and well as the station in general.	9/20FF 6/21PM 9/21FF	2Q22FF
	М	Monitor Certified Fuel Handler performance.		
CM		Conduct of Maintenance (CM)		
CM-7	Ţ	Review PG&E's progress in complying with (1) the amendment to 10CFR50.55a, which provides the requirements for ISI of containment structures (degradation) and (2) ASME Code requirements for steel liner weld inspections.	7/12FF 8/17FF 11/19FF	Each Pair of RFOs 3Q21FF



CM-10	M	On-line Maintenance: review the implementation of on-line maintenance bi-annually, including the 12-week	See list	Regularly
		Rolling Maintenance Schedule about how well it is working & impacting risk. Review trend of amount of on-line maintenance. DCPP Assessment of Maintenance Risk and On-Line Maintenance Risk Procedures have been	at end of OIL	2Q22FF
		substantially upgraded with the addition of an Integrated Risk Review Team.		
CM-13	M	Review Maintenance Department performance measures, staffing, etc. approximately annually.	1/20FF 3/21FF	1/22FF
	М	Monitor Maintenance Department performance in areas related to spent fuel storage and Emergency Preparedness.		
EN		Engineering Programs (EN)		
EN-16	F	DCPP Systems – review a system (or structure or component), system health, long-term plan, Maintenance Rule performance & walkdown with System Engineer at FFs. [Note: Systems reviewed are listed with dates at the end of this Open Items List. (Consider moving smaller number of items from end to body of list.)]	See list at end of OIL	Regularly
EN-19	F	Review every 12-18 months major Engineering Programs, including Configuration Management, Management, System Engineering (system health & long-term plans), Valve Testing, Margin Management, Staffing, etc. [Note: Programs reviewed are listed with dates at the end of this Open Items List. (Consider moving smaller number of items from end to body of list.)	See list at end of OIL	Regularly
EN-20	E	Each Member should review or observe Plant Health Committee, Notification Review Team, Corrective Action Review Board, Performance Review Quarterly Meeting, and other regular meetings.	See list at end of OIL	Regularly 12/21FF
HP		Human Performance: Human Errors and Improving Safety & Efficiency of Plant Performance		
HP-1	М	Review human performance & human behavior items (including error reduction programs, HP PIs, aberrant behavior statistics, FFD, stress reduction programs, Personnel Accountability Policy, Human Performance Steering Committee & Subcomm, Centers of Excellence, Org. Development). Review biennially operator aging, physical fitness, "no solo" issues, attention enhancement, stress management, & incentives for operator focus.	10/19PM 3/20FF 12/20FF 4/21FF	2Q22FF
HP-25	M	Further observations and improvements in the Management Observation Program should be reviewed by DCISC.	4/19FF 7/21FF	1 or 2Q23FF
HS		Health, Nuclear Safety and Safety Conscious Work Environment		
HS-6	F	Follow DCPP progress in establishing/improving its safety culture (and its subset Safety Conscious Work Environment, including Safety Culture Monitoring Panel, and including Employee Concerns & Differing Professional Opinion Programs).	8/19FF 8/20FF 8/21FF	10/21PM 3Q22FF
PI		Performance Improvement Programs		
PI-1		DCPP Performance Improvement Programs: Corrective Action, Self-Assessment, Operating Experience [and line use of OE], Benchmarking, etc. Programs reviewed are listed with dates at the end of the Open Items List. (Consider moving smaller number of items from end to body of list.)]	See list at end of OIL	At least once per year 9/22FF



EP		Emergency Preparedness (EP)		
EP-2	М	Attend and observe DCPP emergency drills and exercises annually [including Hostile Action Based Exercises], paying special attention to JIC communications to the media and public, including radiation release communications to the public, use of social media, coordination of information release with SLO County, and extension of drills to better exercise FMTs & JMC.	11/18FF 9/21FF	10/21PM 9/22FF Next evaluated exercise (FFPM)
RA		Risk Assessment and Management (RA)		
RA-5	М	Review overall [non-seismic] PRA program annually. Include Fire PRA Upgrade & Shutdown Analysis in next review. Much work underway (including plant specific shutdown risk analysis). Review PRA Group resources/capabilities. Turbine Bldg. (CCW & Condenser) internal flooding. Include external flooding and tsunami risk (see SC-6).	9/20FF 9/21FF	3or4Q22 FF RJB
NS		Nuclear Safety Oversight and Review (NS)		
NS-5	М	Monitor NSOC meetings periodically to observe their processes and their review of nuclear safety issues.	11/20FF 3/21FF 7/21FF	Next meeting [see FFPM]
NS-9	М	Monitor DCPP's program to track INPO Areas for Improvement. Review with DCPP Coordinator.	7/20FF 1/21FF 8/21FF	3Q22FF
		Monitor any activities of external oversight entities as applicable (MSRC, INPO, etc.)		
RP		Radiation Protection (RP)		
RP-3	М	Regularly review outage RP performance.	12/19FF 12/20FF 7/21FF	Each RFO
RP-12	М	Review annual DCPP radioactivity release report (or other documents) each year. Review at Summer or Fall FFs.	7/20FF 2/21PM 7/21FF	2or3Q22 FF
QP		Quality Programs (QP)		
QP-3	М	Review the activities, organization and results of QV audits as well as PG&E's outside biennial audits, including timeliness of corrective actions. Review annually – include 4th quarter QPAR with yearly results.	3/21FF 5/21FF	2Q22FF
QP-9	E	Software QA Program	See list at end of OIL	Regularly



NE		Nuclear Fuel Performance (NF)		
NF-9	М	Nuclear Fuel Performance & Issues (review after RFOs).	12/19FF 3/21FF	Each RFO
ER		Equipment Reliability and Life Cycle Management (ER)		
ER-5	M	Monitor the Equipment Reliability Process approximately annually. The indicators for Deficient Critical Components	See list	Annually
		Backlog and Operational <u>Work-arounds</u> rated as needing improvement and the DCISC should continue its review of this item in the future.	at end of OIL	
O E		Organizational Effectiveness & Development (OE)		
OE-1	E	Review DCPP Operating Plan each January after development.	2/21PM 3/21FF	2/22PM
OE-2	E	Station Excellence Plan & Station Oversight Committee (4th Thursday of every month at 9:00am)	3/21FF	10/21PM
SE		System and Equipment Performance/Problems (SE)		
SE-39	Ę	Review and tour the inspections and repairs of concrete Intake Structures following selected refueling outages.	12/19FF 8/21FF	3Q22FF
SE-40	Ę	Monitor the status of transformers & leakage, failures, corrective actions. Follow status of transformer protection barrier.	See list at end of OIL	Regularly 2Q22FF
SE-49	E	Emergency Diesel Generators (EDGs)	See list at end of OIL 7/21FF	Regularly
SE-50	E	Maintenance Rule Functional Failures	See list at end of OIL	Regularly 2Q22FF
OM		Outage Management (OM)		
OM-3	M	During outages, monitor Outage Coordination Center, Control Room, and containment walkdown/inspection (end of outage). Review outage turbine work. Review Steam Generator performance metrics and inspection results.	3/20FF 11/20FF	Each RFO 3/22FF
OM-4	M	Review Outage Safety Plan, safety margin trends, outage results, including clearances, following each outage at FFs and PMs.	12/19FF 9/20FF 7/21FF	Each RFO 3/22FF
OM-5	Ę	DCPP has determined that it needs to do a better job of foreign material exclusion (FME) and this resolution appeared satisfactory to the DCISC team. [Note: FME Program review dates at the end of the Open Items List.]	See list at end of OIL	Each RFO 2Q22FF



SEC		Security (SEC)		200000000000000000000000000000000000000
SEC-3	М	Monitor interaction of Security and Operations, Engineering, Maintenance, and Emergency Preparedness for effects on nuclear safety. Plant security per se not reviewed but reviewed only in the context of impact on plant operation.	12/19FF 12/20FF	4Q21FF
SEC-4	М	Review DCPP progress in implementing their cyber security program in compliance with NRC schedule. Implementation complete.	3/19FF 11/20FF 9/21FF	10/21PM 3Q23FF
SF		Independent Spent Fuel Storage Installation – ISFSI (SF)		
SF-1	М	Monitor ISFSI operations, including cask transfer. Review following next campaign.	10/20PM 5/21FF	2Q22FF
SF-2	М	Follow technical advances of relative risks of cask and pool storage. NRC Staff study and Commissioners' vote. Monitor aging management plans and needs for opening casks to inspect fuel. Monitor SONGS & Humboldt Bay spent fuel transfer plans. Include corrosion of metals	12/19FF 4/21FF	2Q22FF
SF-3	М	Review the seismic adequacy of ISFSI in its license extension. Use latest seismic analysis.	6/18PM 10/19PM	2Q22FF RJB
	М	Monitor the licensing and procurement of new Spent Fuel Casks.		
SC	M	Seismic, Tsunami and Other External Events		
SC-3	M	Long-Term Seismic Program: review periodically. Review significant seismic events as they occur. Reviewed at 6/09 PM.	8/16FF 3/19FF	3Q22FF RJB
SC-12	E	Workplace seismic safety	5/19FF 12/19FF 12/20FF	12/21FF PFP
	М	Monitor the seismic adequacy of SFP and ISFSI and any changes in seismic analysis. Coordinate with IPRP.		
FP		Fire Protection (FP)		
FP-5	М	Review NFPA-805-based Fire Protection Program and Systems every two-three <u>years</u> , including QV audits and NRC triennial inspections relative to spent fuel storage and Emergency Preparedness. Review the health and correction of degraded systems every six months. Monitor fire doors (Plant Door Life Cycle Management Plan) for correction of impairments	1/19FF 3/19FF 5/21FF	Regularly 3Q22FF
LD		Learning & Development Programs (LD)		
LD-3	М	Review non-license technical, operations & accredited training programs at least annually.	7/19FF 5/20FF 1/21FF	1/21FF



LD-6	E	Observe operator license re-qualification classes periodically in FF meetings.	9/20FF 1/21FF	1/21FF
	M	Review Certified Fuel Handling Operator initial and requalification training programs		
NR		Nuclear Regulatory Commission Items (NR)		
NR-3	М	Monitor the Non-Cited Violation Tracking & Trending Program annually at the Jan/Feb Public Meetings.	3/year	Each PM
NR-4	F	Meet with NRC Resident Inspectors regularly.	Most FFs	Regularly
	M	Monitor termination of Part 50 license and renewals of Part 72 license with regards to Spent Fuel handling and storage.		
DEC	F	Decommissioning		
DEC-1	F	Review DCPP decommissioning plans periodically as a result of the Joint Proposal plant shutdown in 2025. Review the timing of spent fuel transfer from wet to dry storage and when the spent fuel pools are decommissioned the plant will lose the capability to open multipurpose canisters for inspection. DCISC should actively review the decommissioning plans for DCPP because of the potential impact on staffing and future options with respect to managing spent fuel. Dr. Peterson observed there have been multiple approaches taken to decommissioning in terms of rate and timing and the DCISC will need to review and discuss with its appointing entities whether and to what extent it will engage in a review of PG&E's decommissioning plans for DCPP. He [Mr. Jones] reported part of the preplanning efforts to meet the charge from the CPUC is the completion of a fuel study that is now in its second draft for review to determine how DCPP can move past the ten-year window to achieve a seven-year window. Dr. Budnitz reported the DCISC will wait and watch the report which comes out of that evaluation.	2/19PM 10/19PM 10/20PM	10/21PM
DEC-3	F	DCISC is at this time principally interested in decommissioning due to the potential impacts during the period of plant operation and will seek clarification about whether the DCISC should play a role post-shutdown.	2/20PM 10/20PM	Close?
DEC-4	F	Emergency preparedness during decommissioning.	8/19FF 2/20PM 10/20PM	10/21PM
	M	Monitor Post Shutdown Decommissioning Activities Report (PSDAR) as to SFP and ISFSI activities.		
	M	Monitor Nuclear Decommissioning Cost Triennial Proceedings as to SFP and ISFSI activities.		
0		Other Items (O)		
0-1	E	Perform observations of evolutions (work processes) within the plant periodically. Continue with these about annually. Work process observations: Observe in the plant work processes important to nuclear safety, such as operator rounds, Control Room shift turnover, surveillance tests, preventive and corrective maintenance, system modifications, system walk downs with system engineers; outage activities, etc.	12/19FF 1/20FF 7/21FF	Regularly 11/21FF 12/21FF
0-2	Ę	COVID-19 response/initiatives/practices.	1/21FF 5/21FF	1/22FF



DCISC Post-Shutdown – Future Open Items List (continued)

DCPP Systems/Components Reviewed Periodically

(suggest moving systems to body of list above)

4 kV - Jan 2020

230 kV & 500 kV - Dec 2019

Aux Feedwater - Sep 2021

Aux Saltwater - Mar 2020

Aux Bldg Ventilation - Apr 2021

Chemical & Volume Control System and High Pressure Injection - Jan 2021

Component Cooling Water - Apr 2020

Compressed Air - Jul 2020

Condensate & Feedwater - Sep 2019

Containment Structure - Nov 2019

Containment Spray - Aug 2019

Containment Ventilation and H2 Purge - Aug 2020

Control Room Simulator - Nov 2020

Control Room Ventilation ?? - Jan 2021

Digital Systems - Sep 2018

DC Power - Apr 2019

EDG - Jul 2021

Fire Protection & Detection Systems for Spent Fuel - Aug 2020

Nuclear Instrumentation & In-core Instrumentation - Sep 2020

Plant Protection System - Mar 2021

Radiation Monitoring for Spent Fuel - Apr 2021

Radwaste Processing - Nov 2020

Reactor Coolant System & Pumps - Aug 2021

RCS Process Control System - May 2020

Refueling Equipment - Dec 2018

RHR - Jan 2021

Rod Control & Indication - Sep 2020

Safety Injection Pumps - Jan 2021

Spent Fuel Pool Cooling & HVAC - July 2021

Steam Generators - Aug 2020

Special Protection System - Mar 2020

Turbine-Generator - Dec 2020

Electric Power to Spent Fuel and EP Systems Cooling Water to Spent Fuel Systems Ventilation for Spent Fuel and EP Systems Spent Fuel and Cask Handling Systems



DCISC Post-Shutdown – Future Open Items List (continued)

DCPP Programs Reviewed Periodically

(suggest moving programs to body of list above)

10CFR50.59 Program – July 2021

ALARA - Sep 2019

Air Operated Valves - Dec 2020

Benchmarking - Nov 2018

Boric Acid Corrosion Control - Apr 2021 (review biennially)

Buried Piping & Tanks - Jul 2020

Chemistry - Aug 2021

Spent Fuel Cranes - Sep 2019

Configuration Management - May 2019

Corrective Action – CARB – Apr 2021

Emergency Preparedness Exercises - Sep 2021

Employee Concerns Program - Aug 2020

Equipment Environmental Qualification - Mar 2020

Equipment Reliability - Sep 2021

Fire Doors & Door Life Cycle Mgm't, Plan - Mar 2019

Fire Protection Program (NFPA-805) - May 2021

FLEX Program ?? - Apr 2019

Flow Accelerated Corrosion - Apr 2019

Foreign Material Exclusion - Dec 2020

In-service Inspection Program - Apr 2019

Integrated Risk Assessment Program - Apr 2020

Large Motors - Jan 2019

Long-Term Capital Planning Process - Dec 2016

MIDAS - Aug 2018

Maintenance Rule - Apr 2021

Margin Management Program - May 2020

Motor Operated Valves - Dec 2020

Notification Review Team - Mar 2020

Nuclear Fuel Program - Mar 2021

On-Line Maintenance - Apr 2020

Operating Experience - Aug 2018 (review biennially)

Operability Assessment Program - Mar 2017

Operational Decision Making - Sep 2020

PRA Programs (non-seismic) - Sep 2021

Performance Improvement - Apr 2019

Performance Review Quarterly Meeting - Apr 2021

Plant Health Committee - Aug 2021

Reactivity Management - May 2021

Safety-Security Interface - Dec 2020

Self-Assessment – Aug 2020

Single Point Vulnerabilities - Sep 2019

Seismic PRA - Sep 2017

Seismically Induced System Interactions - Nov 2020

Software QA - Aug 2021

Spent Fuel Management –May 2021

System Engineering - Nov 2019

Transformers, Large - Jan 2021

Troubleshooting - Jan 2020

Tsunami Hazard Analysis - Sep 2017

Vibration Monitoring - Mar 2021

Fuel and Cask Aging Management



Suggested Steps Forward

By End of 2022:

 Create and Start Regular Updates to Separate Post-Shutdown Open-Items List

Starting in 2023:

- Review/Modify Both Open-Items Lists (Operational and Post-Shutdown) to Plan 2023-2025 Activities
- Consider Future Relationship and Possible Synergies with DCDEP and IPRP

By End of 2024:

- Consider Post-Shutdown Meeting Frequencies
 - Fact-Finding Meetings
 - Public Meetings