

DIABLO CANYON
INDEPENDENT SAFETY COMMITTEE
("DCISC")
(www.dcisc.org)

The meeting will be webcast in real time at:
http://www.slo-span.org/local_webcast/DCISC/stream_index.htm and through <http://www.dcisc.org>.

Committee Members: Robert J. Budnitz
 Peter Lam
 Per F. Peterson

* * * * *

Wednesday & Thursday
February 7-8, 2018
Avila Lighthouse Suites

Point San Luis Conference Center
First & San Francisco Streets
Avila Beach, California

PUBLIC TOUR

Public Tour 02/07/2018 - 8:00 A.M.

PUBLIC TOUR OF DIABLO CANYON POWER PLANT
TO ASSEMBLE AT THE PG&E ENERGY EDUCATION CENTER
(*Prior registration, security clearance, and appropriate attire required.*)

The Members and Technical Consultants of the Independent Safety Committee,
accompanied by members of the public, will conduct a tour of certain areas
of the Diablo Canyon Power Plant ("DCPP").

In the alternative, if the tour must be cancelled for any reason, the Committee may convene an informal question and answer session at the PG&E Energy Education Center, 6588 Ontario Road, San Luis Obispo.

PUBLIC MEETING AGENDA

Afternoon Session - 02/07/2018 - 1:30 P.M.

- I CALL TO ORDER - ROLL CALL
- II INTRODUCTIONS

ADVISEMENT

The Committee may consider at any time requests to change the order of a listed agenda item. Information distributed to the Committee at a public meeting becomes part of the public record of the DCISC. A copy of written material, pictures, etc. must be provided to the Committee's Legal Counsel for this purpose. Correspondence received and sent by the Committee is on file with the Office of the DCISC Legal Counsel and copies are available upon request. Devices for attendees who may be hearing impaired are available upon request. This meeting will be webcast in real time.

- III PUBLIC COMMENTS AND COMMUNICATIONS

Anyone wishing to address the Committee on matters not appearing on the Agenda may do so only at this time. The public may comment on any matter listed on the Agenda immediately following the time the matter is considered by the Committee. *There will be a time limit for each speaker as designated by the presiding officer. No action will be taken by the Committee on matters brought up under this item but they may be referred to staff for further study, response or action.*

IV APPROVAL OF MINUTES

- A. Minutes of October 18-19, 2017, Meeting: Approval

V ACTION ITEMS

- A. Receive PG&E's Response to
DCISC's 27th Annual Report on
Safety of Diablo Canyon Operations;
July 1, 2016- June 30, 2017 Acceptance
- B. Update on Financial Matters,
& Committee Activities Discussion/Action
- C. Discussion of Open Items List Discussion/Action

VI COMMITTEE MEMBER REPORTS AND DISCUSSION

- A. Public Outreach, Site Visits and Other
Committee Activities; Agenda Items,
Scheduling and Confirmation of
Future Fact-findings and Public Meetings
- B. Documents Provided to the Committee

VII TECHNICAL CONSULTANT REPORTS & RECEIVE, APPROVE AND AUTHORIZE
TRANSMITTAL OF FACT-FINDING REPORTS TO PG&E

- A. Ferman Wardell:
Fact-finding Topics; Report on and Approval of the
October 30-31, 2017, November 13-14, 2017 Fact Finding Reports
- B. Richard D. McWhorter Jr.:
Fact-finding Topics; Report on and Approval of
December 12-13, 2017 Fact Finding Report

VIII ADJOURN AFTERNOON MEETING

Evening Session - 02/07/2018 - 6:00 P.M.

IX RECONVENE FOR EVENING MEETING

X COMMITTEE MEMBER COMMENTS

XI PUBLIC COMMENTS AND COMMUNICATIONS

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XII INFORMATION ITEMS BEFORE THE COMMITTEE

A. Informational Presentations Requested by the
Committee of PG&E Representatives

- 1) State of the Plant Update including Key Events, Highlights, Organizational Changes, Institute of Nuclear Power Operations Evaluation Results, and Station Activities since DCISC's October 2017 Public Meeting
- 2) Update on the Status of the Joint Proposal and Employee Retention Plan Including Efforts to Retain Qualified Staff including Licensed Operators

XIII ADJOURN EVENING MEETING

Morning Session - 02/08/2018 – 8:00 A.M.

XIV RECONVENE FOR MORNING MEETING

XV COMMITTEE MEMBER COMMENTS

XVI PUBLIC COMMENTS AND COMMUNICATIONS

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XVII TECHNICAL CONSULTANT REPORT & COMMITTEE DISCUSSION

Richard D. McWhorter Jr.:
Brief Summary of the NRC Staff Assessment and the
Technical Evaluation by Taylor Engineering of the
Flooding Hazard Due to a Tsunami

XVIII INFORMATION ITEMS BEFORE THE COMMITTEE (Cont'd.)

- 3) Update on the Status of NRC Performance Indicators, Licensee Event Reports, NRC Notices of Violation, the NRC's 95001 Inspection, and Issues Raised by the NRC Resident Inspectors
- 4) Results of the 2017 Operating Plan and Key Elements of the 2018 Operating Plan

XIX TECHNICAL CONSULTANT REPORT & RECEIVE, APPROVE AND AUTHORIZE
TRANSMITTAL OF FACT-FINDING REPORT TO PG&E (Cont'd.)

Ferman Wardell:
Fact-finding Topics; Report on and Approval of the
January 18-19, 2018 Fact Finding Report

XX LEGAL COUNSEL REPORT & COMMITTEE DISCUSSION

- A. Robert Rathie:
Administrative, Regulatory and Legal Matters
Including Discussion of a Potential Role for the
Committee after Expiration of the Operating Licenses Discussion/Direction

XXI ADJOURN MORNING MEETING

Afternoon Session - 02/08/2018 - 1:00 P.M.

XXII RECONVENE FOR AFTERNOON MEETING

XXIII COMMITTEE MEMBER COMMENTS

XXIV PUBLIC COMMENTS AND COMMUNICATIONS

Anyone wishing to address the Committee on matters not appearing on the Agenda may do so only at this time. The public may comment on any matter listed on the Agenda immediately following the time the matter is considered by the Committee. *There will be a time limit for each speaker as designated by the presiding officer. No action will be taken by the Committee on matters brought up under this item but they may be referred to staff for further study, response or action.*

XXV INFORMATION ITEMS BEFORE THE COMMITTEE (Cont'd.)

- 5) Handling and Disposal of Damaged Spent Fuel
- 6) Overview of Training in the Use of FLEX Equipment
Including a Representative Training Video

XXVI CONCLUDING REMARKS & DISCUSSION BY COMMITTEE MEMBERS
OF FUTURE DCISC ACTIVITIES

- A. Future Actions by the Committee
- B. Further Information to Obtain/Review
- C. Review of Scheduling of Future Site Visits,
Study Sessions and Meetings

XXVII ADJOURNMENT OF EIGHTY-NINTH PUBLIC MEETING

The DCISC's policy is to schedule its public meetings in locations that are accessible to people with disabilities. The Avila Lighthouse Suites Point San Luis Conference Facility is a wheelchair accessible facility. A person who needs a disability-related accommodation or modification in order to participate in the meeting may make a request by contacting the DCISC office at (800) 439-4688 or by sending a written request to the DCISC office at 857 Cass Street, Ste. D., Monterey, CA 93940. Providing your request at least five business days before the meeting will help ensure availability of the requested accommodation.

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

AGENDA TRANSMITTAL FORM

MEETING DATE:	February 7, 2018	
AGENDA ITEM:	IV-A	
AGENDA TITLE:	Minutes of October 18-19, 2017 Public Meeting	
CONSENT []	ACCEPTANCE [X]	INFORMATION []

Staff Summary: Attached are the Minutes which have been prepared from the Committee's eighty-eighth public meeting held on October 18-19, 2017 in Avila Beach, CA.

(Each session of this public meeting was webcast live in real time and is available for subsequent viewing, archived to the meeting agenda, by visiting the links on the Committee's website www.dcisc.org or at www.slospan.org. Meetings are videotaped for later broadcast on Channel 21 in the San Luis Obispo, CA area, the government access television channel.)

RECOMMENDED COMMITTEE ACTION: Accept the Minutes by motion

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MINUTES
of the
DIABLO CANYON INDEPENDENT SAFETY COMMITTEE'S
OCTOBER 18-19, 2017 PUBLIC MEETING
[For approval at the February 7-8, 2018 Public Meeting]

Wednesday & Thursday
October 18-19, 2017
Avila Beach, California

Notice of Meeting

A legal notice of the public meeting and several display advertisements were published in local newspapers and mailed to the media and those persons on the Committee's service list. A copy of the meeting agenda and the agenda packet were posted on the Committee's website at www.dcisc.org.

Agenda

I CALL TO ORDER - ROLL CALL

The October 18, 2017, public meeting of the Diablo Canyon Independent Safety Committee (DCISC), the eighty-eighth public meeting of the Committee, was called to order by Committee Chair Dr. Peter Lam at 9:00 A.M. in the Point San Luis Conference Room at the Avila Lighthouse Suites in Avila Beach, California. Dr. Lam welcomed the members of the public in attendance. The public meetings of the Committee are viewed in live streaming video at www.dcisc.org and www.slospan.org and are videotaped for later broadcast on the local public access television station. Dr. Lam introduced and briefly reviewed the appointment to the DCISC for each of the other DCISC Members and their professional backgrounds. Dr. Budnitz reviewed Dr. Lam's professional background. Dr. Lam commented the DCISC was established 28 years ago by the California Public Utilities Commission (CPUC) with its only role being the review of the operational safety of Pacific Gas & Electric Company's (PG&E) Diablo Canyon Nuclear Power Plant (DCPP).

Present: Committee Member Robert J. Budnitz
Committee Member Peter Lam
Committee Member Per F. Peterson
Absent: None

II INTRODUCTIONS

Dr. Lam introduced and briefly reviewed the professional backgrounds of the Committee's Technical Consultants, Mr. Richard D. McWhorter, Jr. and Mr. R. Ferman Wardell and DCISC Assistant Legal Counsel Robert W. Rathie.

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Dr. Lam recognized and acknowledged the presence of Mr. Albert Lundeen, Deputy Executive Director for Strategic Planning and Media for the California Energy Commission (CEC). Mr. Lundeen thanked Dr. Lam and he conveyed greetings to the Members from CEC Chair Dr. Robert B. Weisenmiller and remarked that the DCISC is unique and its focus on safety will be critical during what he described as a transitional period for DCP. Mr. Lundeen commended the DCISC for the accessible and open manner in which it conducts its business. Mr. Lundeen observed the CEC is now developing its 2017 Integrated Energy Policy Report (IEPR) which will define the energy policies for California including those related to nuclear energy and the public comment on the IEPR is now open.

Dr. Lam recognized and introduced DCP Chief Nuclear Officer Support Manager Mr. Hector Garcia who acts as the principal liaison with the DCISC and who plays a key role on behalf of PG&E in working with the DCISC to coordinate activities and provide information.

III PUBLIC COMMENTS AND COMMUNICATIONS

The Chair inquired whether there were any members of the public present who wished to address remarks to the Committee on items not appearing on the agenda for the public meeting and he reviewed the advice from the agenda concerning items or issues which are brought to the attention of the Members by the public during public meetings.

Ms. Rochelle Becker, Executive Director of the Alliance for Nuclear Responsibility (A4NR), was recognized. Ms. Becker requested that the DCISC undertake efforts to determine whether the Committee might continue to perform a role in reviewing decommissioning activities at DCP after the plant shuts down generation operations. Ms. Becker remarked that under the Joint Proposal by PG&E and six other parties, including A4NR, to retire DCP at the end of its current operating licenses (Joint Proposal) that the plant could shut down no later than 2025 but she remarked that closure might occur earlier and the Committee should be prepared by seeking guidance from the CPUC for a post-shutdown role. Ms. Becker urged the Members to take whatever steps might be necessary to allow the DCISC to continue in its role of performing an independent safety review during the post-shutdown decommissioning period.

Dr. Budnitz stated that the DCISC is only now just beginning to evaluate and review PG&E's decommissioning plans, staffing, programs, budgets, and similar issues and he believes those activities to be within its current Restated Charter from the CPUC but he acknowledged there is a question concerning whether the Committee would have a role, and if so what that role might be and how it might or should be defined, once the operating licenses for both units expire. Dr. Peterson commented that this is an issue for which the Committee should seek advice from its Legal Counsel. Dr. Peterson observed the present Restated Charter for the Committee would not necessarily encompass a role for the DCISC once the plant ceases generation operations and there are very likely policy issues to be addressed and those persons responsible for establishing policy need to be alerted. Assistant Counsel Rathie remarked that the Committee might consider opening a dialogue with the CPUC on this issue.

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Dr. Budnitz observed the matter of conducting an inquiry into an expanded role for the Committee might actually be subject to challenge as being outside the remit of the present Restated Charter and that it would be good to obtain clarity on this matter prior to DCPD beginning its transition to post-generation status. Ms. Becker commented that the A4NR could file a petition to modify the present Restated Charter but the Committee would need to be willing take a position in support or to show interest in that effort. Mr. Rathie observed that in a Decision by the CPUC which continued the Committee's existence there was language stating that the DCISC should retain discretion to determine how best to accomplish its mission and therefore the Committee has some ability under the Restated Charter to review issues related to decommissioning while generation operations continue. Dr. Peterson remarked that the policy framework which the DCISC implements is established externally and any ambiguity as to the safety oversight role of the DCISC is something which the Committee should obtain guidance and clarity sooner rather than later. Ms. Becker asked Mr. Rathie to provide the reference for his comment on the Committee's discretion regarding its mission. That reference, to CPUC Decision 04-05-055 issued on May 24, 2004, was subsequently provided to Ms. Becker.

Dr. Lam stated, absent legal clarification, he was prepared to broadly interpret the Restated Charter to include review of operational safety and decommissioning activities but he concurred with Dr. Peterson on the need to obtain further clarification in this matter. Dr. Peterson remarked it was important that the DCISC not unilaterally expand its mission outside the scope of the clear mandate to review operational safety in the Restated Charter but he observed there will be activities related to plant decommissioning that will be undertaken far in advance of final shutdown of Unit 1, which is scheduled to be the first of DCPD's two nuclear reactors to shut down with Unit 2 scheduled to shut down one year after Unit 1. Accordingly there will be some significant and overlapping decommissioning activities occurring for Unit-1 while Unit-2 remains in operation and therefore decommissioning activities would necessarily have the potential to impact generation operations as that term is understood in context of the Restated Charter. **Mr. McWhorter suggested that an item be added to the Committee's Open Items List concerning the matter of possibly establishing a post-shutdown role for the DCISC to review issues related to plant decommissioning.** Dr. Peterson commented it was important that the DCISC not be perceived as lobbying for a role to review post-shutdown decommissioning issues but rather is simply bringing the matter to the attention of policymakers as, while a post-shutdown role might make sense, it is not a decision that the Committee is able to make on its own. Dr. Peterson remarked the State of California faces significant issues concerning the manner in which spent nuclear fuel will be stored and managed and a mandate to review nuclear fuel storage throughout the state might better serve the residents than having the Committee look only at issues related to DCPD. Ms. Becker stated the Committee might consider inviting Mr. David Victor of the San Onofre Community Engagement Panel to provide an update on what is being done in Southern California. Dr. Peterson confirmed his understanding that there have been certain issues identified related to the San Onofre Nuclear Generating Station (SONGS) decommissioning that may have future implications for DCPD.

Dr. David Weisman, Outreach Coordinator for A4NR, was recognized. Mr. Weisman provided to the Committee testimony submitted by Mr. Victor to the Nuclear Regulatory Commission (NRC) on what Mr. Weisman described as the goals, challenges, and successes of the San Onofre Community Engagement Panel. Mr. Weisman remarked that seven years ago the

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DCISC opined on the matter of PG&E's application to relicense DCPD which was something that was scheduled to occur following the current licensing period and was, like decommissioning, a speculative matter. Dr. Budnitz replied that certain activities which were undertaken for relicensing had a direct impact on plant operations as PG&E was preparing to make certain changes and Dr. Budnitz commented that this was also true in context of DCPD's preparation for decommissioning as to the effect on operational safety of necessary changes or, in the alternative, the failure to make such change will be assessed by the DCISC.

IV ACTION ITEMS

**A. DCISC's 27th Annual Report on Safety of Diablo Canyon Operations:
July 1, 2016 - June 30, 2017.**

The Chair requested Consultant Wardell to lead the discussion concerning preparation of the 27th Annual Report. Mr. Wardell reported three drafts were circulated for review and a draft of the Executive Summary was provided for final review and as the basis for this discussion regarding approval of the report. At the Chair's request Mr. Wardell read the single recommendation of the DCISC from its 27th Annual Report:

PG&E should perform additional study of submarine landslide-induced tsunami hazards at DCPD and its environs.

Mr. Wardell then reviewed the basis for that recommendation as follows:

"The DCISC believes that a probabilistic analysis would provide the annual frequency of various tsunami "sizes" at the DCPD site, including estimates of the various uncertainties. Here the word "size" might have one of several meanings, including tsunami maximum height, tsunami run-up, tsunami volume (related to its force on structures), or other possible endpoints. The DCISC endorses developing an estimate (or a useful upper bound) on the annual frequency of a tsunami-caused core-damage accident at DCPD. Such a Core-damage Frequency (CDF) estimate could be used by decision-makers and the public to understand whether the overall CDF risk from tsunamis is (or is not) an important contributor to the total CDF from all accidents at DCPD. Developing a probabilistic "understanding" does not, in the DCISC's view, necessarily mean performing a full-blown quantitative probabilistic analysis of the tsunami hazard. Instead, it might involve something less, such as a demonstrably conservative bounding analysis of the annual probabilities of various tsunami "sizes," or an analysis that aims for a realistic probabilistic description but might have very large uncertainties, if that is the best that can be accomplished. Perhaps the desired upper-bound CDF estimate would be easier to develop in a defensible way than a quantified realistic CDF."

Consultant McWhorter observed the Recommendation was a carry-over from last year's report period because, as of June 30, 2017 the end of the 27th Annual Report period, PG&E had not provided an update or any analysis concerning the subject matter of the Recommendation and he noted that as of September 2017, an update has been provided which will be reviewed during this public meeting. Dr. Peterson observed unlike the NRC the DCISC does not have the ability to direct PG&E to take any action as the DCISC's authority is limited to making recommendations to which PG&E has always been responsive. In the event the Committee was not satisfied with PG&E's response to one of its recommendations the DCISC has the ability to raise the matter with the CPUC, the NRC, or with the responsible officials and entities who appoint its members, the Governor, the California Attorney General and the Chair of the California Energy Commission. Consultant Wardell reported that the overall conclusion of this and all previous DCISC Annual Reports is that PG&E has operated the plant safely during the report period.

The DCISC Annual Reports are made available in two bound volumes, as a compact disk and on the Committee's website at www.dcisc.org. The report is made available to the public and sent to the CPUC and the entities appointing members of the DCISC and to other interested parties and provided for inclusion in the collections of the California Polytechnic University at San Luis Obispo (Cal Poly) R.E. Kennedy Library and local libraries in San Luis Obispo County.

On a motion by Dr. Budnitz, seconded by Dr. Peterson, the Committee unanimously accepted its Twenty-Seventh Annual Report on the Safety of Diablo Canyon Operations for the period July 1, 2016-June 30, 2017. Mr. Rathie reported the 27th Annual Report will now be provided to PG&E for its review and response which will be considered by the Committee at its February 7-8, 2018, public meeting and then incorporated in the final report.

B. Update on Financial Matters and Committee Activities 2017-2018.

In response to the Chair's request Assistant Legal Counsel Rathie reported that a report was provided showing the expenditures by the Committee to date and the grant funds received for the Committee's operations which are provided by PG&E's ratepayers in accordance with the CPUC Decision which continued the operation of the Committee. He reported the DCISC should complete its activities during calendar year 2017 without exceeding the funds allocated for its operations and will likely once again be in a position to remit the unspent funds back to the ratepayers. Mr. Rathie directed the Members' attention to the agenda packet with the list of planned activities for the remainder of 2017 and for 2018 and 2019. He commented that the date for the October 2018 public meeting was changed from October 17-18, 2018 to October 10-11, 2018 [subsequently changed again from October 10-11 to October 24-25, 2018, see Section V below].

C. Discussion of Issues on Open Items List.

Dr. Lam requested Consultant Wardell lead a review of items on the Open Items List, which he described as a very important tool used by the Committee to track and also to follow issues, concerns, and information requests identified for subsequent action or receipt

during fact-finding and public meetings.

Items discussed or concerning which action was taken included the following¹:

<u>Item</u>	<u>Re:</u>	<u>Action Taken</u>
CO-7	DCPP Storm Response	Retain & add “as necessary”
CM-14	Portable Electric Device Use	Title changed
	& Management of Large Data Sets	
EN-20	Review Plant Health Committee Mtgs.	For 10/17FF PL/RFW Review re other standing mtgs.
HP-1	Human Performance & Behavior	For 9/17 FF(RJB/RDM)
RA-6	Seismic Fragility Analysis	Combine w/RA-7 when DCPP submits report; Last Action 9/17 FF Next Action tentatively 11/17FF
RP-3	Rev. Radiation Protection During Outage	Schedule after 2R20
RP-12	Rev. Radiological Release Report	Schedule for 3/4 Qtr 18
RP-13	Rev. Radiological Release Report	Schedule for 3/4 Qtr 18
QP9	Software QA Programs	Delete reference to 2006 FF
SE-39	Concrete Intake Structure Review	Schedule after 2R20 & make last action 9/17FF
SE-42	Safety System Functional Failures	Add nos. re improved performance Schedule for 3Q19FF & make last action 6/17PM
SE-51	Plant Protection System Upgrade	Schedule for 2/18PM
SG-6	Steam Generators Performance Metrics	Move to Outage Mgmnt. Section (OM) & include w/post outage rev.
OM-5	Foreign Material Exclusion	Make last action 9/17FF & schedule next action Mid-2019SEC-
3	Security & Operations	Add that security only reviewed in context of impact on operations & cyber security reviewed in accord with NRC requirements
SF-1	Monitor ISFSI operations	Schedule next action 3Q18FF
SF-2	Cask & Pool Spent Fuel Storage	Add ref. re rev. of Humboldt Bay Power Plant & rail access issues & Schedule for 2019
SC-4	Tsunami & Local Intense Precipitation	Make last action 10/17PM Schedule for 2Q18FF & 6/18PM

¹ Key to abbreviations used: Public Meeting (PM), Quarter (Q), Fact-finding (FF), To Be Determined (TBD), Dr. Robert J. Budnitz (RJB), Dr. Per F. Peterson (PFP), and Mr. R. Ferman Wardell (RFW), Mr. Richard D. McWhorter (RDM), Quality Assurance (QA), Independent Spent Fuel Storage Installation (ISFSI)..

FP-6	Conversion to NFPA-805 Regulation	Make last action 10/17PM Schedule for 4Q18 after Unit-2 outage review
BDB-6	DCPP FLEX Status	See RA-6 and RA-7 above
DEC-1 ²	Decommissioning Plans	Make last action 10/17PM Schedule for 1Q18 delete RJB
DEC-2	Spent Fuel Repackaging	Make next action 12/17FF PFP
6/17PM-2	Review of Westinghouse GSI-191 Report	Moot due to deterministic analysis cancel 4Q17FF review & hold for receipt of DCPD report
10/16PM-5	Systems, Structures & Components	Make last action 10/17PM & Close
10/16-17	Joint Proposal & Offsite Power	Make last action 10/17PM & Close
6/17PM-2	95001 Inspection "White Finding"	Make next action 11/17FF RJB/RFW
6/17PM-7	Transmission Problems/Offsite Power	Combine with 500kV System Item and make next action 12/17FF PFP/RCM

System/Program Review (pgs. 11-12)

"Plant - Dec 2013"	Review re origin of reference
Fire Protection Non NFPA-805	Make last action 9/17FF
PRA Programs (non seismic)	Make last action 9/17FF
Seismic PRA	Make last action 9/17FF
Tsunami Hazard Analysis	Make last action 9/17FF

Items identified on the list and not included in the above were identified by Mr. Wardell for closure and so approved.

Following the discussion of item RA-6 Dr. Budnitz reviewed with the Committee PG&E's efforts to incorporate the use of FLEX³ equipment into probabilistic risk assessment (PRA) analyses including but not limited to inclusion of FLEX in the seismic PRA. This process will necessarily occupy several months and will include an assessment of activities never before analyzed in context of PRA. Dr. Budnitz remarked that if the methodology is determined to be sound in trial versions it will be employed throughout the entire U.S. nuclear industry. The

² Add reference to the Open Items List that 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.

³ FLEX is not an acronym but describes a strategy developed by the nuclear industry to identify diverse and flexible coping strategies to address the loss of safety-related systems due to beyond design basis events.

methodology must be developed in accordance with the American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) standards and will be peer reviewed. The PRA analysis of FLEX is hoped and expected to reduce core damage frequency (CDF) by a considerable factor. Dr. Peterson observed the concept of deploying FLEX equipment in the effort to retain safe shutdown capability goes back in time to the attacks of September 11, 2001, and the NRC's B.5.b initiative, and subsequently was informed by the accident to the Fukushima Dai-ichi Nuclear Power Plant (Fukushima) in Japan on March 11, 2011, due to the earthquake and tsunami.

Ms. Sherry Lewis, representing the group San Luis Obispo Mothers for Peace, was recognized during the discussion of Open Item DEC-2 and Ms. Lewis commented that it is her belief the spent fuel from DCPD will remain on the plant site for some considerable period of time and there will be a continual need to assess its condition.

Ms. Rochelle Becker of the A4NR was recognized and inquired whether any additional information was available concerning Open Item SE-51, the upgrade to the Plant Protection System. Consultant McWhorter replied that DCPD has commenced categorizing its capital improvement projects as "must do" or "probably won't do" and has prioritized a list of the projects that may or may not be done as part of the capital planning process for calendar year 2018. Mr. Wardell stated he expects that PG&E will be asked to make a presentation on this topic to the DCISC at the February 7-8, 2018, public meeting. He reported DCPD has assured the DCISC that no capital projects have been dropped for calendar year 2017. Dr. Budnitz remarked that these are among the most important decisions by PG&E concerning which the DCISC will monitor and review. Ms. Becker also requested that when there is a reference in the Open Items List to persons by name that an indication be included as to whether that person is a PG&E employee or a member of the public.

Mr. David Weisman of the A4NR was recognized. Mr. Weisman reported that an aircraft crash on December 7, 1987, occurred in San Luis Obispo County within a few miles of the epicenter of the blind thrust seismic fault involved in the 2003 San Simeon earthquake. Mr. Weisman commented that the Department of Energy has designated rail access for DCPD to facilitate nuclear waste removal and that transporting nuclear waste from DCPD by barge has been ruled out as too hazardous given the danger of ocean currents in the vicinity of the oilfields located offshore in the Santa Barbara Channel. Dr. Budnitz responded and reported that after the September 11, 2001, terrorist attacks in New York City, U.S. nuclear plants were analyzed for their vulnerability to aircraft impact and the DCISC received a public presentation on that topic. The NRC concluded at that time U.S. nuclear plants including DCPD could withstand such an event and shut down safely. Since that time, the Department of Energy has sponsored a study which established a methodology for determining, with data from the Federal Aviation Administration, the probability that an aircraft impact would occur on a particular facility. Dr. Budnitz remarked, and Mr. Weisman agreed, that while the probability is very low it is not zero.

A short break followed.

V COMMITTEE MEMBER REPORTS AND DISCUSSION

A. Public Outreach, Site Visits and Other Committee Activities:

The Members confirmed and, in the case of the October 2018 public meeting, rescheduled, public meetings of the DCISC for February 7-8, June 13-14, and October 24-25, 2018, and they then scheduled a public meeting for February 13-14, 2019.

Fact-finding visits were confirmed and scheduled as follows:

[2017] October 30-31 PL/RFW; November 14-15 RJB/RFW; December 12-13, 2017 PFP/RDM;

[2018] January 17-18 PL/RFW; March 6-7 RJB/RDM; April 18-19 PL/RFW; May 2-3 PFP/RDM; July 10-11 PFP/RFW; August 21-22 PL/RDM; September 5-6 RJB/RFW; November 7-8 RJB/RDM; December 12-13, 2018 PFP/RFW; and

[2019] January 23-24, 2019 PL/RDM.

Dr. Lam reported that as he is the appointee of the California Energy Commission (CEC), with Assistant Legal Counsel Rathie, he is scheduled to meet in Sacramento, California with the California Energy Commission Chair, Dr. Robert B. Weisenmiller, and representatives and technical staff of the California Energy Commission.

Following the discussion on Committee activities, the Chair called for public comment. There was no response to his invitation.

VI STAFF-CONSULTANT REPORTS & RECEIVE, APPROVE AND AUTHORIZE TRANSMITTAL OF FACT FINDING REPORTS TO PG&E

The Chair requested Consultant Wardell to report on the July 25-26, 2017, fact-finding visit with Dr. Peterson to DCP. Mr. Wardell remarked he had expanded his presentation and included additional power point slides in accordance with direction provided at the June 2017 public meeting. He reviewed the topics discussed with PG&E during the July 25-26, 2017, visit as follows:

➤ Meet with NRC Senior Resident Inspector - Mr. Wardell stated the discussion included the emergency evacuation process and evacuation routes; matters related to NRC review of decommissioning, which would be conducted by a different NRC office from that which provides the resident inspectors on site while the plant is in generation operation; the NRC's public information meeting held on August 29, 2017; issues concerning transportation of spent

fuel; the four-year incentive plan proposed to retain qualified personnel to continue to operate the power plant during the period between approval of the Joint Proposal and plant shutdown; the NRC 95001 inspection related to the White finding for which Mr. Wardell reported the DCISC now has and will be reviewing the inspection report; and finally to discuss the frequency of the interaction between the NRC Resident Inspectors and the DCPD Site Vice President.

➤ Fire Doors - Mr. Wardell reported out of 414 Equipment Control Guidelines, a total of 280 are applicable to fire doors within the plant. The doors within the plant, including the fire doors, are very heavily used with tens of thousands of openings each year. In 2014 DCISC determined that the repair or replacement of impaired fire doors was not in accord with a frequency which the DCISC found satisfactory and the DCISC recommended that the repair or replacement program be accelerated. DCPD instituted a program to do so in 2016 and Mr. Wardell reported good progress has been achieved and the program is on schedule, with a change in focus from primarily replacing doors to now repairing more doors. Mr. Wardell reported this allows the doors to be returned to satisfactory status more economically and expediently. Dr. Peterson remarked that replacement of a door costs approximately \$100,000, with the cost of the door itself representing only about \$5,000 of that amount. Dr. Peterson observed that in some ways this high cost is adverse to safety and he stated he was somewhat disappointed not to have found more of a questioning attitude concerning why replacement of a door should be so expensive. Mr. Wardell reported that a significant portion of the total replacement cost represented corporate overhead which was not included in the total cost in prior years. Dr. Peterson acknowledged that replacement of the doors, some of which perform a function in retaining pressure, is not a simple matter as the door frames must also be replaced and often a compensatory structure must be constructed to maintain integrity of function.

➤ Annual Radiological Release Report - Mr. Wardell stated this report is submitted by DCPD to the NRC each year and the current report showed only very small releases which made up only a fraction of the level allowed by the plant's Technical Specifications.

➤ Annual Radiological Environmental Monitoring Report - Mr. Wardell commented this report monitors samples around the plant of water, vegetation, soil, animal, and worker exposure. The current report determined that a typical DCPD worker with a 40-hour work week would receive 1.0 millirem exposure in a one-year period.

➤ Control Room Ventilation System - Mr. Wardell stated the ventilation system, while serving to keep the Control Room comfortable and safe, can also be placed into a recirculation and filtration mode in the event of a radiation release in order to protect the operators. In 2013 a test determined that there was some in-leakage which was greater than permitted and compensatory measures were taken to install back draft dampers. DCPD has now received approval from the NRC to use an alternate source term which Mr. Wardell described as more realistic and the new in-leakage test and analysis performed demonstrated the ventilation system function to be at acceptable levels with some modification required to duct work and filters and

flow switches which is now being performed and should be complete by the end of 2017. **Mr. Wardell recommended a fact-finding visit be made early in 2018 to confirm the completion of the modifications and to then close this issue on the Open Items List.**

➤ Direct Current (DC) Power System - the DC System has three separate trains, two of which are safety-related and one of which is not. Mr. Wardell reported that if the plant were to lose access to alternating current (AC), the DC System, composed of 180 batteries which are all kept constantly charged, would have the capability to supply power to mitigate accidents and keep the plant safe. The DCISC fact-finding team toured the DC System with the System Engineer.

➤ Plant Health Committee - Mr. Wardell described the Plant Health Committee as a director-level committee which reviews and monitors system and equipment component health and takes action to prevent or address issues with systems and components. The system engineers are called upon to make presentations to the Plant Health Committee. During the meeting attended by the DCISC representatives security equipment and gate valve reliability were discussed. Mr. Wardell stated the meetings were run effectively and efficiently and good results are achieved.

➤ Management Observation Program - this program provides non-intrusive management supervision of work being performed within the plant with the purpose of imparting management expectations to employees and to review human performance and employee safety issues. Mr. Wardell described the program as a valuable way to foster communications between employees, managers, and supervisors.

➤ Nuclear Fuel Performance - Mr. Wardell reported the DCISC reviews this issue following each refueling outage. Both units have had very few fuel defects, with Unit 1 not having a defect in the last 27 years and Unit 2 having experienced its last fuel defect six years ago. Mr. Wardell described the fuel assemblies in which the fission process is generated and remarked that a crack or a hole in a fuel pellet within a fuel rod can result in fission products being released into the reactor coolant. The plant conducts chemistry sampling and performs visual inspection of the fuel assemblies during each refueling outage to assess the presence of damage to fuel. Mr. Wardell reported the DCISC fact-finding team found the fuel at DCPD to be in very good condition.

➤ Independent Spent Fuel Storage Installation - Mr. Wardell reported during 2016 there were 12 multipurpose storage canisters (MPCs) filled, each with 32 spent fuel assemblies and then transported to the ISFSI, placed into storage over packs and placed within the ISFI and that there are now a total of 49 MPCs within the confines of the ISFSI. DCPD plans in 2018 to fill and transfer an additional 8 MPCs, in 2020 to fill and transfer 8 more MPCs, and in 2022 to fill and transfer 8 additional MPCs. The ISFSI has capacity to store all the fuel which would be produced by DCPD generation operations through 2025. Mr. Wardell reported there are no

damaged fuel assemblies presently stored in the ISFSI and all damaged fuel remains in the Spent Fuel Pools and is located within a special canister. When all fuel is removed from the Spent Fuel Pools, the damaged fuel canister will be placed in a MPC and moved to the ISFSI. In accordance with the Joint Proposal, DCPD is presently studying ways in which it might accelerate the loading schedule for spent fuel.

➤ DCPD Safety Culture - Mr. Wardell reported this represents an important aspect in the operation of any nuclear facility and periodic assessments are performed by the plant and by the NRC. The culture is assessed in accordance with guidelines provided by the Institute of Nuclear Power Operations (INPO) and no problems have been identified at DCPD.

➤ Use of FLEX Equipment to Reduce Plant Risk - Mr. Wardell reported DCPD has FLEX equipment on the site and in storage ready for use and this equipment is maintained and tested periodically and is sometimes employed to reduce risk in everyday situations. As an example Mr. Wardell described the use of FLEX equipment, with its quick-connect features used during refueling outages in connection with the ability to maintain Containment venting. **Dr. Budnitz stated during 2018 there will be additional training on the use and deployment of FLEX equipment and strategies for employing FLEX and the DCISC will make the effort to observe this training during future fact-finding and will review the effectiveness of the training.** Dr. Peterson observed that the principal focus of FLEX is on reducing risk in plant operations but it is important to understand how FLEX equipment might also be used under a variety of beyond design basis events including seismic events and employment of FLEX is closely tied to the fragility analyses for various equipment as well as to plant access issues which may be expected to result from a beyond design basis accident. Dr. Budnitz described the three categories which trigger immediate application of FLEX as including: (1) total loss of the equipment necessary to access the ultimate heat sink; (2) a total loss of power; and (3) both (1) and (2) occurring at the same time. Mr. Wardell confirmed that FLEX equipment and procedures are in place and at least one round of training has been conducted and this is a program which the entire nuclear industry is implementing.

➤ Cyber Security - Mr. Wardell stated the DCISC's review is limited to whether the plant is achieving its goals relative to cyber security in accordance with the NRC requirements for identifying, modifying and protecting critical digital assets. He reported the final completion of these efforts is required by the end of 2017 and DCPD is expected to meet that deadline.

Dr. Peterson remarked that portions of the July 25-26, 2017, fact-finding were videotaped for use in the informational video the DCISC is in the process of producing for use during its public tours, on the Committee website and for other applications as appropriate.

Following Mr. Wardell's presentation, Ms. Rochelle Becker, Executive Director of the A4NR, was recognized. Ms. Becker inquired concerning the current pattern of repairing fire doors versus their replacement and whether this was a different pattern than that employed

previously. Mr. Wardell responded because of the addition of corporate overhead this has significantly increased the cost of replacement of a door and this was a factor in the plant opting to repair doors at a lesser cost rather than replacing them with the corresponding need to employ compensatory measures when replacing a door. Ms. Becker commented that compensatory measures had always been required when replacement was undertaken and that the process required today as described by Mr. Wardell is not new. Dr. Peterson commented the plant has also found that replacement of hardware rather than an entire door is often sufficient to restore full function and perhaps in the past more doors were replaced than was necessary. Dr. Peterson commented DCP plant staff have always demonstrated excellent practices regarding assuring that fire and other security doors are properly closed and latched. Dr. Peterson commented and Mr. Wardell agreed that given the high cost of replacement, the option to repair a door when available allows more doors to be restored to good condition and full function in less time. Dr. Budnitz remarked that it was his understanding that at present perhaps 12-15 doors have been determined to have an impaired function. Ms. Becker inquired as to the point at which it becomes too expensive to replace rather than to repair a door. Dr. Peterson remarked that in the past DCP might not have been keeping up with the repair or replacement at a rate that kept fire doors in an ideal condition. Ms. Becker noted that keeping up with repairs has been an issue for PG&E but as DCP is a nuclear power plant and is expensive to operate it is necessary to make whatever repairs are required to make the facility safe. Mr. Wardell remarked the DCISC identified the issue of the prioritization of fire door functionality approximately two years ago and the plant has been doing a satisfactory job and staying current with repair and replacement since then but it is the addition of corporate overhead that has caused the price of replacement to increase. Ms. Becker observed that corporate overhead has always been a part of the price of this type of capital outlay. Mr. Wardell stated he did not have a further response as to corporate overhead element of the cost.

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis stated it was her understanding that the plant has in the past experienced problems with fire doors inadvertently being left open. Mr. Wardell confirmed that was the case some years ago but he explained that since identification of that issue DCP instituted a successful program to train its personnel on the need to ensure that doors are properly closed and latched after each use.

Mr. David Weisman of the A4NR was recognized. Mr. Weisman stated his comment concerned item RA-7 from the discussion of the Open Items List regarding DCISC review of DCP's seismic PRA, which is expected to be issued in November 2017, and he remarked that the NRC's reevaluation of PG&E's Senior Seismic Hazard Analysis Committee (SSHAC) seismic studies is now approximately six months to one year late and he questioned whether it would make better use of time to wait until the NRC reevaluation is received before reviewing PG&E's seismic PRA. Dr. Budnitz acknowledged the logic in Mr. Weisman's suggestion but stated the DCISC's intention is to review both at the time they are made available because if there is something identified in either report it is important that this be brought to light sooner rather than later. Mr. Weisman stated a separate and independent review made sense but it is

important that, due to the length of time which has and might continue to pass, both submittals remain on the DCISC's Open Items List for eventual review. Consultant McWhorter and Dr. Budnitz reported that last week PG&E requested an extension of the time for submittal of its seismic PRA due to findings and recommendations received during peer review process and he confirmed that the NRC, present as an observer during the peer review process, is committed by its post-Fukushima directives to move forward on its review.

Upon a motion made by Dr. Budnitz, seconded by Dr. Lam, the July 25-26, 2017 Fact Finding Report was accepted by the DCISC and its transmittal to PG&E was authorized. The report will become a part of the Committee's 28th Annual Report.

The Chair requested Assistant Legal Counsel Rathie to report on administrative, regulatory and legal matters. Mr. Rathie stated that in accordance with direction provided at the June 2017 public meeting, letters were sent inviting federal, state and local officials or their representatives to attend this public meeting of the Committee. He reported the 27th Annual Report which the Membership approved at this meeting will now be transmitted to PG&E for its response which will be considered by the Committee at the February 2018 public meeting and will become a part of the 27th Annual Report. Finally, he reported that activity on the Committee's website has increased and now averages 1,780 unique visitors every month.

VII ADJOURN MORNING MEETING

The Chair adjourned the morning meeting of the DCISC at 12:30 P.M.

VIII RECONVENE FOR AFTERNOON MEETING

Dr. Lam reconvened the afternoon meeting of the DCISC at 1:35 P.M. He recognized the presence in the audience of Mr. Gregory Haas, District Representative for U.S. Congressman The Honorable Salud Carbajal, representing California's 24th Congressional District, and Ms. Annie Aguiniga, Assistant District Director for The Honorable State Senator William Monning, representing the 17th State Senate District of California. Mr. Haas and Ms. Aguiniga were asked if they wished to address any remarks to the DCISC.

Mr. Haas stated that on behalf of Congressman Carbajal he wanted to thank the Committee for the many years that the DCISC has been holding public meetings. Mr. Haas remarked Congressman Carbajal is very interested in the future of the Committee including what direction the DCISC may take concerning the foreseeable decommissioning of DCPD and in how the Committee can assist the Congressman and the local community in understanding and addressing the difficult and complex issues that have arisen and will arise concerning decommissioning and the eventual closure of DCPD. Mr. Haas stated that he expects there to be a continuing dialogue on these issues.

Ms. Aguiniga read a statement on Senator Monning's behalf in which the Senator regretted he could not be present in person but in which he provided an update on his efforts in the California Legislature with regard to decommissioning DCPD including Senator Monning's sponsorship of Senate Bill (SB) 968 which calls for a comprehensive economic assessment of the regional impacts resulting from the closure of DCPD to be completed no later than by July 1, 2018. Ms. Aguiniga remarked Senator Monning envisions that this assessment will be a part of the discussions and decisions being considered in context of the Joint Proposal and will provide a baseline of information to support recommendations for all associated parties to best address the economic impacts after DCPD closes. Cal Poly has been chosen as a third party evaluator for this economic impact assessment. Ms. Aguiniga stated Senator Monning would like the DCISC to continue to encourage public interaction and dialogue regarding the decommissioning of DCPD and the Senator thanked the DCISC for its continued oversight and efforts toward making the San Luis Obispo area safe.

IX COMMITTEE MEMBER COMMENTS

The Members thanked Mr. Haas and Ms. Aguiniga for their remarks. Dr. Lam recognized and acknowledged the presence in the audience of Mr. Cary Harbor, Director of Compliance, Risk and Business Planning for PG&E's generation line of business.

X PUBLIC COMMENTS AND COMMUNICATIONS

Dr. Lam invited members of the public to address the Committee on matters not on the agenda for this meeting.

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis reported that Mothers for Peace is conducting a series of three educational lectures. The first, for which the selected topic is on-site storage of nuclear waste, is scheduled for October 20, 2017; the second, for which the topic is the proposed Yucca Mountain repository, is scheduled for November 10, 2017; and the third, for which the topic is transportation of radioactive waste, will be held on January 19, 2018. She provided cards to the Committee and for distribution to members of the public with this information.

XI STAFF-CONSULTANT REPORTS & RECEIVE, APPROVE AND AUTHORIZE TRANSMITTAL OF FACT FINDING REPORTS TO PG&E

The Chair requested Consultant Wardell to report on the August 9-10, 2017, fact-finding visit to DCPD with Dr. Lam. Mr. Wardell reviewed the topics discussed with PG&E during that visit:

- Meet with NRC Senior Resident Inspector - Mr. Wardell reported the DCISC representatives discussed issues with the Senior Resident Inspector including those related to:

seismic workplace safety; the November 14, 2017 FLEX inspection; the NRC's review of PG&E's March 2015 evaluation of the risk to the plant from a tsunami and from locally intense precipitation; the NRC's approval of use of an alternate source term for the Control Room Ventilation System; modifications made, and to be made, to address the open phase power issue to preclude damage to equipment and the training and procedure changes required; and the NRC's and the DCISC's future plans to review the field monitoring teams which are deployed in the local area with radiation monitors during emergency drills or in the event of an actual emergency.

- Containment In-service Inspection - Mr. Wardell reported the Containment structure, which he described as an extremely strong concrete structure with a welded steel liner, undergoes a number of inspections and tests on a regular and periodic basis. During 1R20 the Unit 1 Containment welds were inspected and this inspection is performed every ten years. To date, there have been no issues identified with either Containment structure. Mr. Wardell displayed a photo which showed the inside of the Containment dome and the welds which were the subject of the inspection.
- Liquid Radioactive Waste Processing System - Mr. Wardell reported this system is used to process liquid waste and utilizes evaporators and filters to do so. He reported while most of the waste is recycled, some is monitored and then discharged to the ocean through the Auxiliary Service Water System. Mr. Wardell reported approximately one million gallons of liquid waste is processed each year which is a major reduction from the volumes processed prior to 2000, when improved equipment and operations were implemented. He displayed a graph showing the amounts of liquid discharge from 1986 through 2009. Mr. Wardell reported the latest audit of the Radioactive Effluent Control Programs by the Quality Verification (QV) Department concluded those programs were being effectively implemented.
- DCISC Member Meeting with DCPD Site Vice President - Mr. Lam met with DCPD Site Vice President Jim Welsch to discuss topics reviewed during the fact-finding visit.
- Steam Generator Health - Mr. Wardell reported the four steam generators (SGs) for each unit were replaced during 2008-2009 with SGs having improved tubes. DCPD inspects 100% of a unit's SG tubes every three refueling outages and since their replacement these inspections have found all SG tubes in excellent condition.
- Equipment Environmental Qualification Process - this process is a testing and validation program used to verify that electrical equipment is qualified for use in the environmental for which it is intended. DCPD maintains an equipment qualification master list and the process is subject to periodic assessments and NRC inspection which have found the process to be satisfactory and appropriate to the task.

- Engineering Excellence Plan - Mr. Wardell reported the DCISC fact-finding team met an Engineering organization director and Mr. Wardell reported the Engineering Excellence Plan is aligned with the Generation Department Operating Plan, the Nuclear Culture Survey and the Joint Proposal concerning operations through 2025. The Engineering Excellence Plan is included in both the supervisor and line employee's performance management plans.
- Observe Chemistry Sampling Process - Mr. Wardell reported on his observation of the testing by a Chemistry organization technician of samples obtained from the Chemical and Volume Control System (CVCS) for radioactive materials which might be indicative of a fuel defect. Mr. Wardell reported the technician followed the latest procedures in conducting the test and used proper human performance tools in performing the test. These tests are performed in two locations within the Radiation Control Area of the plant.
- Operator Staffing Adequacy - Dr. Lam met with a manager in the Operations Planning organization to discuss DCP's plans to retain adequate staffing of licensed and unlicensed operators. Mr. Wardell reported DCP has a comprehensive five-year plan to address a variety of staffing contingencies and approval has been received to overstaff the Operations Department for this year. Dr. Lam reported that this is an area on which the DCISC has expressed significant concern following the announcement of the Joint Proposal to retire DCP. He stated it appears PG&E has expended a great deal of effort in its planning and analysis efforts and Dr. Lam stated that, at this point in time, he is persuaded that the efforts by PG&E senior management and planning staff are adequate but he remarked there will be many issues to be addressed in the future that may not have been foreseen at this time. He stated the five-year plan represents a best guess estimate of the supply and attrition of plant staff and the plan includes detailed provisions for hiring and training contingencies.
- Independent Spent Fuel Storage Installation (ISFSI) Loading Campaign - Mr. Wardell reported he reviewed this topic in depth during his earlier report on the July 2017 fact-finding visit.

Ms. Rochelle Becker of A4NR was recognized and she inquired from whence came the approval to overstaff the Operations Department for 2017. Mr. Wardell reported that approval for increased staffing was given internally by the Chief Nuclear Officer.

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis inquired why the graph showing the liquid radioactive discharge showed data only up to 2009. Mr. Wardell and Dr. Budnitz replied that this was the information provided to the Committee but that the DCISC reviews the release report every year and since 2009 the releases have been very small, representing only a fraction of the amount allowed by the plant's Technical Specifications. Dr. Budnitz reported that the significant reduction from amounts produced in prior years was achieved due to technical changes in the way effluent is handled, stored, and kept safe. Ms. Lewis stated she understood Dr. Budnitz' reply but found the data provided by the graph and the

answers of the Committee not to be very satisfactory. In response to Ms. Lewis inquiry about protective equipment necessary when handling nuclear fuel, Dr. Budnitz responded that the handling of fresh nuclear fuel does not present a significant radiological hazard to workers as the fresh fuel produces only small amounts of alpha radiation. Drs. Budnitz and Peterson reported that the principal hazard to workers occurs at the fresh fuel manufacturing facility and arise due to chemical toxicity issues which generally require the wearing of respirators but once the fresh fuel is placed within a fuel rod there is little or no concern for hazards from radiation or from chemicals.

Following a motion by Dr. Budnitz, seconded by Dr. Peterson, the August 9-10, 2017 Fact Finding Report was accepted by the Committee.

The Chair requested Consultant McWhorter to report on the September 6-7, 2017, fact-finding visit to DCPD with Dr. Budnitz. Mr. McWhorter reviewed the topics discussed with PG&E during that visit including:

➤ Plant Health Committee - Mr. McWhorter reviewed three of the items considered by the Plant Health Committee (PHC). The first concerned the issue of a vital inverter input breaker which failed to latch during 1R20 following a trip test due to the reset mechanism becoming stuck due to dry grease. A plan was presented which the PHC deemed adequate to replace all these breakers and contingency plans are in place if a breaker does not open in the interim. The second issue reviewed by the PHC involved cracking of some Unit 1 high pressure turbine blades discovered during routine testing. There were 20 indications discovered of which 2 were found to be the result of cracks with the potential to propagate such that continued operation to the end of plant life could not be assured. Two groups of turbine blades, with 4 blades in each group were replaced. The issue of possible replacement of turbine blades will be planned for during Unit 2's next refueling outage. The third item reviewed by the PHC concerned a walk-in item (i.e., an emergent item not on the meeting's agenda) regarding a nonconforming condition involving the heat flux hot channel factor which is related to distribution of heat vertically within the core. Westinghouse determined the technical specifications were non conservative and additional actions were put into place which would require power to be reduced in excess of the requirements of the Technical Specifications to prevent exceeding the heat limit but Mr. McWhorter reported the change to the Technical Specifications has not yet been accepted by the NRC. The NRC has requested that the change to DCPD Technical Specifications be placed on hold until the NRC processes a license amendment from another plant which is participating in a pilot program for this issue. The PHC was requested to, and did, extend the internal tracking date for completion of this issue. Dr. Budnitz observed that this nonconforming condition was the subject of an interim analysis accepted by the NRC that justified continued operation. The DCISC team concluded the PHC performed efficiently and effectively with good participation and discussion of issues.

➤ Non Seismic Probabilistic Risk Assessment (PRA) Programs - Mr. McWhorter briefly reviewed the five non seismic areas which are the subject of plant PRA programs including: (1) the Fire PRA which forms the basis for the plant's transition to and implementation of regulations mandated by the National Fire Protection Association (NFPA) Standard 805 entitled "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants" (NFPA-805) by which a plant can implement changes that do not increase the probability of core damage without the need for NRC approval; (2) the internal flooding PRA for which analysis by an updated model continues to show that contribution to total plant core damage frequency (CDF) from internal flooding events continues to be a small fraction of the overall probability of core damage; (3) low power and shutdown PRA which is on hold at present awaiting two other plants to apply the new ASME/ANS standard and Mr. McWhorter reported DCPD will be using newer Phoenix software in place of its current Safety Monitor Program to support both on-line and off-line maintenance beginning with 2R20 in 2018; (4) external event PRA for events including external flooding, aircraft impact (for which Department of Transportation data is used to screen out the risk and impact of the probability and consequences of an aircraft impact) and tornado missile impact; and (5) NRC Generic Issue 191 PRA regarding the impact of debris accumulation in the Containment sump on performance of pressurized water reactors for which Westinghouse is performing an analysis but for which DCPD has now determined to resolve by the use of a deterministic analysis. Mr. McWhorter stated DCPD expects approval of changes to its risk informed Technical Specifications in the near future and the fact-finding team concluded the PRA team at DCPD continues to do good work.

In response to Dr. Peterson's inquiry, Dr. Budnitz confirmed that the seismic PRA uses the same basis and standards for its PRA modeling tools as is used for the other PRA analyses but the seismic PRA includes a different set of initiating events and the various PRA efforts may be understood as chapters of the same fundamental PRA data sets but are employed to address and deal with the narrow issues which arise in their respective contexts. Dr. Peterson remarked this was logical given that DCPD has a high seismic hazard factor but he observed that perhaps there is a fair amount of determinism overlaid into the probabilistic assessment, to which Dr. Budnitz stated the PRA community has struggled to assure that the seismic PRA efforts now underway are realistic and not conservative and he stated his opinion that there is now enough data available to have confidence that this is true.

➤ National Fire Protection Association (NFPA) 805 Program - Mr. McWhorter reported the NRC approved DCPD's application for approval to transition to NFPA-805 regulations in April 2016 and the requirements for implementation including training and physical modifications. With the exception of certain items for which exceptions were granted, training and modification requirements to be in place by April 15, 2017. The DCISC team confirmed that DCPD has completed the transition to NFPA-805 implementing procedures and training and completion of physical modifications for Unit 1 is being accomplished in the 1R20 refueling outage during which the incipient fire protection and remote shut down panel plant modifications were made and the final remaining incipient fire detection modification for Unit 2 will be made

during 2R20 in the spring of 2018. Without the cost of physical modification, the cost of the transition was approximately \$19 million. Ms. McWhorter stated there was an issue identified just prior to the implementation date concerning the clarity of calculations regarding Containment penetration seals which required development of a fire protection engineering evaluation. DCPD will undergo a complete, additional, fire protection engineering evaluation to document the engineering basis for the NFPA-805 Program and allow implementation of the self-approval process to allow changes based on risk assessment which, unlike changes made under the former 10 CFR Appendix R to Part 50 regulations, will not require NRC approval. The process for Unit 1 should be complete by November 2017 and for Unit 2 during the spring of 2018. The program will then be managed using fire safety analysis software which is expected to be ready for use by the end of 2017. The fire PRA work is on hold until the self-approval process can be fully implemented after which the fire PRA will be updated to include the final modifications and the impact of the implementation of those modifications. The fact-finding team concluded that DCPD has completed implementation of NFPA-805 with the exception of the modifications required to Unit 2.

➤ Maintenance Department Performance - the DCISC representatives met with the new Director of Maintenance Services to discuss issues of concern identified by the Quality Verification (QV) organization concerning human performance and electrical safety. The team also reviewed an apparent cause evaluation for a recent near miss of a serious accident when maintenance workers were about to connect a ground buggy to an energized 12kV bus cubicle which, if not halted by a supervisor who was in the area, would have created a sizeable arc flash event which might have caused injuries to the workers and damage to equipment. The cause of this near miss was a failure to follow electrical maintenance procedures or to use standard human performance tools. Dr. Budnitz remarked that this represents a very serious issue of a type not seen often at DCPD and had the supervisor not alerted the workers a huge electrical arc would have resulted that could have been very serious and this confirms that from time-to-time there are going to be safety culture problems which the plant must use every effort to prevent and the DCISC will await and review the analysis of this event by DCPD and the corrective measure taken. Mr. McWhorter stated the Maintenance Director reported on several recent personnel changes which have resulted in four of the five lead managers in the Maintenance Department being former holders of senior reactor operator licenses. Maintenance will also focus on optimizing outage scope by improving walk downs which are conducted four weeks prior to the work and on improving maintenance fundamentals in human performance and procedure adherence. Current staffing in the Maintenance organization is 232 persons which will soon be reduced to 228 and then trend downward to about 200 over the next few years. Mr. McWhorter stated the DCISC team was told this was due to reduction in preventive maintenance required as the plant approaches the end of its license period. **Mr. McWhorter stated there have been valid concerns identified in the Maintenance Department for which actions are being taken and he recommended the DCISC conduct a further review of the Maintenance Department in late 2018.**

- Foreign Material Exclusion (FME) Program - Mr. McWhorter stated the purpose of the FME Program is to prevent undesired and potentially harmful intrusion of foreign material into plant systems and this most often occurs during outages. A negative trend was identified in 1R20 by two occurrences. The first involved a synthetic hood worn by a worker being dropped into the refueling canal and sucked into a residual heat removal pump where it disintegrated. There was no damage to the pump and analysis showed the chemicals involved would not have a long term impact. The second occurrence involved a worker dropping a box of rivets from scaffolding in the Turbine Building, some of which fell into a feed pump turbine that was open at the time for maintenance. Due to FME requirements much of the feed pump was covered but extensive efforts were required to retrieve the rivets. DCPD determined that contractor personnel were involved in the majority of the events that compromised FME and accordingly a dynamic learning activity for contractors, which was previously conducted but had been deleted from contractor outage training, and will now be revived and included in future training for contractors before outages. The DCISC team determined the performance of the FME Program continues to be good although with specific events identified and lessons learned.

- Institute for Nuclear Power Operations (INPO) Evaluations Preparations - DCISC representatives met with the DCPD Station Director to discuss the upcoming INPO evaluation.

- Local Intense Precipitation Analysis - Mr. McWhorter reported this analysis was required by the NRC as part of the required post-Fukushima response and involves analysis of the risk from external flooding events which could give rise to flooding from Diablo Creek with the consequence that water could enter the lower levels of the Turbine or the Auxiliary Buildings. As a result sandbags have been staged in these buildings as an interim safety measure. However, DCPD's analysis has determined the amount of water that could be produced by locally intense precipitation and flooding from Diablo Creek is less than the amount of water that could be produced by a circulating water pipe break inside the Turbine Building and therefore internal flooding as a result of locally intense precipitation is bounded by the results that already exist for a circulating water pipe break and no modifications are required. Mr. McWhorter stated if DCPD's analysis is accepted by the NRC this will be the end of the issue and interim actions will no longer be required. In response to Dr. Peterson's inquiry Mr. McWhorter, Dr. Budnitz and Dr. Lam discussed whether a commitment resulting from a 10 CFR 50.54(f) letter directive would be characterized as a Technical Specification requirement or as a part of a Updated Final Safety Analysis Report (UFSAR). DCPD Manager Mr. Hector Garcia responded that if the commitment becomes a part of the FSAR it is implemented as a procedure and the commitment would be through the FSAR with a procedure in place to make sure the activity occurs.

- Tsunami Hazard Analysis - Mr. McWhorter reviewed the history of the DCISC's review of the tsunami hazard and risk to DCPD and its environs as a result of offshore, near-shore events that involve submarine landslides. The Committee previously engaged Dr. Robert T. Sewell, a recognized expert in the field of tsunami analysis, and Dr. Sewell made his report to the Committee and to the public in June 2016. In response to a DCISC Concern in the 26th

Annual Report, PG&E has undertaken additional studies in this area. During the PRA peer review process a series of findings and observations were generated, one of which involved external events initiated by a seismic event involving both off shore and on shore landslides and PG&E will address this issue in its final seismic PRA document when it is submitted to the NRC. The DCISC fact-finding team reviewed a preliminary analysis which concluded that the probability of core damage from a seismically generated off shore landslide is several orders of magnitude less than the probability of core damage from the earthquake itself. The analysis included review of a tsunami possibly topping the 44-foot level of the Auxiliary Saltwater System snorkels as well as reaching the 85-foot plant level and the assumption in the analysis is that every earthquake of a magnitude of six or more would cause an off shore landslide with a hypothesized wide range of resulting submarine landslides. **Dr. Peterson remarked it would be good for the DCISC to review the basis for the determination of the range of the size of these landslides when the DCISC reviews the final submittal.** Dr. Budnitz agreed and he confirmed that the preliminary analysis showed a significant margin. Mr. McWhorter reported the relationship between the size of the earthquake and the size of a resulting submarine landslide was based upon information submitted by PG&E to the NRC in March 2015 and Dr. Peterson observed that this information was based entirely upon a deterministic analysis. Dr. Budnitz reported the current preliminary analysis is a mix of deterministic and probabilistic analyses and he stated he was encouraged by PG&E's work in this area as a result of the DCISC's Concern. Mr. McWhorter reported that in the tsunami analysis no credit is taken for the employment of FLEX equipment. Dr. Budnitz reported that when the analysis is ready it will again be reviewed by the same peer review group, by the NRC and also by the DCISC.

- Meet with NRC Senior Resident Inspector - Mr. McWhorter reported the meeting included discussion of the fact-finding agenda as well as the report which was expected at that time to be issue soon on the results of the NRC's 95001 inspection related to a recent White finding made by the NRC. Mr. McWhorter confirmed that the 95001 Inspection Report has now been issued and is being reviewed DCP and the DCISC.
- Seismic Probabilistic Risk Assessment Program - the focus for this program is on DCP's response to the NRC's post-Fukushima directives to perform a seismic PRA analysis which, as he reported previously, is nearly complete but which has resulted in several peer review group findings and observations including: a non seismically-qualified item being constructed over a seismically-qualified piece of equipment; the potential for seismically-caused fires due to high energy arcing in electrical cabinets or in lubrication oil reserves; as well as for a seismically-generated offshore landslide as discussed previously. He reported DCP expects to schedule its submittal of the seismic PRA to the NRC in April 2018. **The DCISC team concluded that PG&E's work appears to be sound and the DCISC should continue to follow developments with regard to resolution of the findings and observations and the submission to the NRC.**

➤ Auxiliary Saltwater System Health - Mr. McWhorter reported the Auxiliary Saltwater (ASW) System is a safety-related system consisting of four pumps, with two pumps serving each unit, to supply cooling water from the Pacific Ocean to the component cooling water heat exchangers located in the Turbine Building. The pumps have the ability to be cross-tied to serve the other unit and the ASW System is relied upon for accident cooling by Containment Spray and Residual Heat Removal Systems. The DCISC team reviewed an issue with recurring corrosion on the ASW System pump packing studs which, when they were replaced with a corrosion resistant new material, resulted in corrosion of the pump packing gland and therefore reanalysis is being performed to identify compatible materials that can coexist in a wet, saltwater, environment without becoming sacrificial anodes. Mr. McWhorter described this as a long term reliability issue. DCPD has also engaged a vendor to perform operability calculations to address a concern which arose during the summer of 2014 when Pacific Ocean temperatures off shore from the plant approached the analyzed limit established of less than 70 degrees Fahrenheit. Temperatures in excess of that limit would be outside the plant's Technical Specifications. However, no date has yet been identified for completion of this work. The DCISC team also accompanied the system engineer for the Intake Structure on a walkdown of the Intake Structure. Mr. McWhorter reported the Intake Structure is a difficult facility to maintain due to its constantly wet environment and the DCISC representatives found it to be clean and apparently well maintained. Several areas of the concrete floor were recently cut away and replaced. McWhorter reported significant effort has also been expended in installing new drives and variable speed controllers for the traveling screens. Dr. Budnitz remarked that a significant number of the system engineers at DCPD are now younger engineers and uniformly the DCISC has found all these individuals to be well-trained, well-informed excellent engineers who are knowledgeable about their respective systems.

➤ DCISC Member Meet with DCPD Officer - Dr. Budnitz met with Mr. John Frank, DCPD Vice President of Generation Technical Services, for a briefing on items of mutual interest.

Following a motion by Dr. Budnitz, seconded by Dr. Peterson, the September 6-7, 2017 Fact Finding Report was accepted by the Committee.

A short break followed.

XII INFORMATIONAL DISCUSSION BY THE COMMITTEE

The Chair stated this time was set aside on the agenda for the Committee to discuss how to improve its effectiveness. Dr. Lam invited Mr. Harbor and Mr. Garcia to participate in the discussion with reference to any issues for which either might have a comment on behalf of DCPD. Several items identified on the agenda were discussed in turn as follows:

➤ Presentation of Fact Finding Reports at Public Meetings. Dr. Budnitz stated he asked that this topic be included as it is his belief allowing additional time during public meetings for the Committee's Technical Consultants to present oral reports on fact-finding would be beneficial for the public and the Committee. Dr. Budnitz remarked that as state law provides that substantive discussion between the Members on topics within the Committee's subject matter jurisdiction may only take place at properly noticed public meetings, the public meetings represent the only time the full membership has the ability to interact and discuss the reports on Committee fact-finding visits. Dr. Budnitz acknowledged that expanding the time for fact finding reports could result in less time available for informational presentations by PG&E. Drs. Lam and Peterson stated they very much value the informational presentations by PG&E and the Committee should ensure sufficient time is available for the topics on which the DCISC has requested DCPD to make a presentation. Following discussion, the Committee Members determined that 45 minutes should be allowed for the presentation of each fact-finding report. It was also requested that the Consultants continue to expand the use of power points and photographs during their reports at public meetings to provide an additional level of detail.

➤ Conduct of Public Meetings. Dr. Lam inquired as to the number of public meetings which the Committee is required to conduct each year. Assistant Legal Counsel Rathie replied that the Restated Charter does not set a specific number for DCISC public meetings. Drs. Peterson and Budnitz observed that, given the Joint Proposal which, if approved, would result in closure of DCPD at the end of its current operating licenses in 2024 and 2025 respectively, this is not the time to look at reducing the number of public meetings or fact findings by the Committee. Dr. Peterson commented that should the Committee have a role to review decommissioning issues after both reactors are shut down, the number of items on the Open Items List will become substantially smaller and accordingly the number of public meetings might be reduced at that time. Dr. Budnitz stated it was his opinion that it was premature for the DCISC to consider what or if it could or should have a role to review decommissioning issues after both reactors shut down. Dr. Budnitz observed, however, that to date there has not been a situation where the DCISC was dissatisfied with PG&E or DCPD's performance so as to discern a need to escalate the matter to the Committee's appointing authorities. He remarked that in the future this might not always be the case depending on many of the issues which will emerge as the plant moves toward closure. In such a case it may be that the DCISC will perceive a need to conduct more public meetings and additional fact-finding.

Consultant McWhorter remarked that with the present three public meetings per year schedule each Member generally conducts a fact-finding visit to the plant in the interim between public meetings. Mr. McWhorter observed that in the event the Committee has in the future fewer items to cover during its public meetings the meeting duration might be reduced from two days to one day. In response to Dr. Lam's inquiry, Dr. Budnitz discussed the duration and frequency of the meetings of DCPD's internal Nuclear Safety Oversight Committee (NSOC) in comparison to the duration and frequency of the DCISC review and public meeting activities and found that both groups spend approximately twelve days at DCPD in each calendar year,

although NSOC has the benefit of having the entire Committee on-site for the entire period when the NSOC meets on its four-day meeting schedule with three such meetings each year. Following their discussion, the Members agreed to maintain the current schedule of conducting three public meetings each year.

➤ Public Tours. Assistant Legal Counsel Rathie reported that over the past ten years the DCISC public tours have averaged 39 persons participating on each tour and there has been no significant variation in this number by month. He stated that most tour participants give addresses within California and the majority of participants are residents of or have some connection to the San Luis Obispo/Central Coast area. In response to the Committee's inquiry, Mr. Harbor reported that PG&E currently conducts approximately 150-200 tours every year which accommodate approximately 3,000 total persons. Dr. Budnitz remarked he would favor a schedule wherein the Committee would conduct only one tour with members of the public every year. Drs. Peterson and Lam remarked that not only do the tours give the members of the public an opportunity to interact informally with the DCISC Members, they also allow the Members and Technical Consultants to learn about issues which are of particular importance or interest to the public and they remarked that the tours were in furtherance of the mandate to the Committee from the CPUC to conduct public outreach in the local area. Mr. Harbor stated PG&E fully supports the concept of public outreach afforded by plant tours.

In response to a query from Ms. Lewis, Drs. Peterson, Lam and Budnitz stated that they did not believe the majority of participants on the DCISC tours had a personal connection to PG&E or to DCPD but rather the desire to tour the plant by a wide spectrum of members of the public stems from an interest in nuclear power or a curiosity about Diablo Canyon Power Plant in particular. Assistant Legal Counsel Rathie reported that when the Committee's Office of Legal Counsel accepts reservations for the plant tours inquiry is made as to the caller's affiliation or interest and that from these inquiries, over a period of many years, no discernable segment of the population emerged as a dominant source of reservations for the DCISC's public tours. Consultant McWhorter opined that as the interaction between the Members, the Technical Consultants and the public appears to provide a principal incentive for the public in taking the DCISC public tour, perhaps more time might be set aside on the bus ride to and from the plant to allow the public to ask questions of Members and Technical Consultants. Dr. Peterson stated the informational video now being produced for the Committee should provide a vehicle to introduce the Committee to the public and to describe how the Committee functions and performs its safety review function and **the time on the ride back to the Energy Education Center from the plant should be employed to afford the public the opportunity for the public to ask questions of the Committee.**

Dr. Budnitz expressed his opinion that the format of the presentation made at the Energy Education Center by PG&E before the tours should be revised to eliminate any discussion of the energy situation in California and to allow more of the presentation to be made by the DCISC. Dr. Budnitz and Mr. Wardell both remarked that more of the presentation should focus on activities that take place within the plant and on nuclear power fundamentals. Drs. Lam and

Peterson expressed their desire to continue to provide an opportunity for PG&E to make a presentation, including affording discretion as to the content of that presentation, at the Energy Education Center in conjunction with the public tour and the remarks by the DCISC Chair, the Members, and the Technical Consultants. They observed that employing an informational video as a vehicle to explain the role of the Committee could accompany the DCISC remarks.

Following this discussion, the Membership opted to continue to provide discretion to PG&E to make its presentation to the public at the Energy Education Center during DCISC public tours and confirmed the consensus of the Committee to resume public tours of DCPP with members of the public at the Committee's February 2018 public meeting.

➤ Outreach to Government Officials. Dr. Budnitz stated that it has been some time since he has been afforded the opportunity to meet with either the Attorney General or the Attorney General's representatives. Dr. Budnitz stated he last met with now Governor Brown when the Governor served as the Attorney General and since that meeting he has only had one opportunity to meet with a deputy attorney general and staff members. Dr. Lam remarked the California Energy Commission (CEC) has been very engaged in meeting with him as the Energy Commission appointee to the DCISC and the CEC has sent a number of representatives, including on one occasion the CEC Chair, to attend the Committee's public meetings and a representative of the CEC is in attendance here today. Dr. Peterson remarked that he did not find it unusual that the CEC would be the most involved with the Committee as nuclear power is central to the mission of the CEC. Dr. Peterson reported that as the Governor's appointee to the DCISC he met on one occasion with Governor Brown and since then he has met annually with the Governor's Director of the Office of Planning and Research who is involved with energy policy. The Members determined that efforts should continue to be made and outreach conducted to facilitate, if possible, annual meetings between DCISC Members and the state officials or agencies which are responsible for making appointments to the Committee.

➤ Annual Report. The Members briefly reviewed the process of development and preparation of the Committee's Annual Report and determined that there did not appear to be a basis for changing the current practices employed in preparation, distribution and in the method for making Committee Recommendations and for receiving information from PG&E in response to its Annual Reports. Mr. Harbor stated that from PG&E's perspective the Committee's Annual Reports have been comprehensive and review and responding to the Annual Reports does not impose an undue burden on PG&E.

➤ Engagement for Consultants for Special Projects. The Members discussed and confirmed that the Committee has the ability, should a need arise, to engage special consultants for discrete tasks or investigative research into topical areas for which the consultant has special expertise. Dr. Budnitz remarked that decommissioning may prove to be such an area and he suggested that the Committee may want to investigate and identify a person with experience in decommissioning a nuclear power plant to assist the DCISC in the identification of

decommissioning-related issues. **Dr. Budnitz made an offer which the other Members accepted to take the lead in identifying such persons. Dr. Peterson commented he is interested in understanding the disposition path for all the various materials and components which will result from decommissioning a nuclear power plant.** Dr. Peterson suggested that perhaps someone associated with the decommissioning of the San Onofre Nuclear Generating Station (SONGS) might be available and willing to provide a presentation to the DCISC during a future public meeting or to act as a consultant to the DCISC, as SONGS experience may not be entirely dissimilar to DCP's as both power plants are located on the California coastline and are subject to similar permitting and other regulatory requirements and constraints. **Consultant McWhorter commented that the experience and lessons learned from plants which have been afforded a period of advance notice prior to decommissioning might also prove useful.**

Dr. Lam suggested that the engagement of a special consultant to review decommissioning may be timely after clarification is received concerning whether there will be a role for the DCISC after the plant shuts down. Dr. Budnitz stated he understood Dr. Lam's comment and he observed that in the interim between now and final shut down the DCISC will need to maintain an active interest in decommissioning, as during that period decommissioning activities will intersect with operational safety considerations which will remain within the Committee's purview. **Dr. Peterson requested that a reference be added to the topic on Decommissioning on the Open Items List to the effect that the DCISC is at this time principally interested in decommissioning due to the potential impact during the period of generation operations and will seek clarification about whether the DCISC should play a role post-shutdown to review decommissioning issues.**

Ms. Rochelle Becker, Executive Director for the A4NR, was recognized. Ms. Becker remarked that it cannot be simply assumed that DCP will remain in operation until the end of the final operating license in 2025, as the Joint Proposal provides that the plant will close no later than that date. She observed there are numerous factors which might result in the plant closing earlier. She encouraged and she stated she would support the DCISC in reaching out as soon as possible to the CPUC concerning a post-shutdown role to review decommissioning. Ms. Becker reported that there have been many meetings related to SONGS decommissioning including concerning waste issues and she encouraged the DCISC to review the records of those meetings to identify potential consultants and she suggested Mr. Geoffrey Fettus of the Natural Resources Defense Council as a person who was very well respected in this area. Ms. Becker remarked that SONGS closure did not have the community impacts that will result to the San Luis Obispo local area from the closure of DCP but there are other plants which did have similar impacts when they closed including Kewaunee Nuclear Power Station in Wisconsin, the Crystal River Nuclear Power Plant in Florida, and the Vermont Yankee Nuclear Power Plant in Vermont. Ms. Becker stated the appointing entities for the DCISC Members, with the exception of the CEC, have little input into the process. She encouraged the Committee to investigate the matters now pending, or soon to be pending, before the State Lands Commission, the State Water Resources Control

Board, and the California Coastal Commission, as well as the CPUC, as these agencies will be required to address permitting issues in their proceedings and the San Luis Obispo area would benefit from being made aware of the issues by the efforts of the DCISC. **Dr. Budnitz requested the office of the DCISC Legal Counsel to review and opine concerning the role and options available to the DCISC to review decommissioning activities at DCPD post-shutdown and how to go about making inquiry or a request to implement any decision by the Committee concerning such a role. Assistant Legal Counsel Rathie confirmed that the office of Legal Counsel would follow through concerning Dr. Budnitz' request and the issues raised by the other Members and would report back.** Mr. Rathie reported that the last operative change made to the Committee's Charter by the CPUC was initiated by a request from the Committee and that a similar path might be appropriate should the Committee decide to pursue a post-shutdown role to review issues related to decommissioning.

Ms. Sherry Lewis of Mothers for Peace was recognized and Ms. Lewis urged the DCISC to heed Ms. Becker's advice.

➤ DCISC Interaction with PG&E. After a brief review of this topic, the Members determined that the Committee's interaction with PG&E to date has been fully acceptable and positive and there were no suggestions for change entertained at this time. Mr. Hector Garcia, Support Manager to the Chief Nuclear Officer, remarked that on behalf of PG&E the interaction with the DCISC has been very positive and professional and DCPD has tried to support all the requests brought to it by the Committee.

XIII ADJOURN AFTERNOON MEETING

The Chair adjourned the afternoon meeting of the Committee at 4:55 P.M.

XIV RECONVENE FOR EVENING MEETING

Dr. Lam reconvened the evening meeting of the DCISC at 5:15 P.M.

XV COMMITTEE MEMBER COMMENTS

There were no comments by Members at this time.

XVI PUBLIC COMMENTS AND COMMUNICATIONS

Dr. Lam invited members of the public to address the Committee on matters not on the agenda for this meeting. There were no comments by members of the public at this time.

XVII INFORMATION ITEMS BEFORE THE COMMITTEE

The Chair requested Mr. Harbor to introduce the first of the informational presentations for this public meeting. Mr. Harbor introduced Mr. Dennis Petersen, Director of Nuclear Work Management at DCP, and Mr. Harbor reported Mr. Petersen holds a Bachelor of Science Degree in Aeronautical Engineering and has held a Senior Reactor Operator's License and in his more than 30 years of nuclear experience Mr. Petersen has held leadership roles in Operations, Quality Verification and Training organizations.

State of the Plant Update Including Key Events, Highlights and Station Activities since the DCISC's June 2016 Public Meeting, Summary of Station Highlights and Performance.

Mr. Petersen commented he was filling in for this presentation for Ms. Paula Gerfen, Station Director/Plant Manager, who is on vacation. Mr. Petersen stated both units are now operating at 100 percent power with probabilistic risk assessments (PRAs) and all NRC Performance Indicators (PIs) in "Green" which is acceptable status. Mr. Peterson reported Unit 1 has operated at 100% power since the 1R20 refueling outage with the exception of a planned curtailment to 25% power to perform repairs on an oscillating feedwater regulating valve following 1R20. Unit 2 has operated at 100% power since the last DCISC public meeting in June 2017, with the exception of an unplanned curtailment to 96% power to perform repairs on a moisture separator reheater low pressure drain tank dump valve. In response to Dr. Budnitz' query Mr. Harbor remarked he was the Duty Station Director during the curtailment of Unit 2 and the curtailment was for a period of approximately six hours and was due to a thermal limit which would have otherwise been exceeded. In response to Consultant McWhorter's inquiry concerning the Unit 1 feedwater regulating valve Mr. Petersen stated the problem was with a controller which was causing cyclical oscillation and no work was performed on the controller during 1R20.

Mr. Petersen displayed graphs showing the daily load profiles for both units for the past four months and for the past twelve months.

Mr. Petersen reviewed the Station Alert declared for Unit 2 on July 28, 2017, at 12:06 P.M. due to low oxygen levels in Containment. He reported the plant had been attempting to identify the cause of a nitrogen leak and, as Containment entry was planned for normal operator rounds, an atmospheric sample was obtained from Containment which showed oxygen levels in Containment were below required content. This coincided with an emergency action level for declaring a Station Alert. The cause of low oxygen levels was nitrogen leakage from a relief valve associated with the backup nitrogen accumulator for a power operated relief valve. An O-ring failed and as nitrogen was released in Containment it displaced oxygen. The Station Alert was terminated at 7:19 P.M. on the same day. In response to Dr. Budnitz' observation, Mr. Petersen confirmed that although the pressure operated relief valve was considered inoperable, its safety function was not compromised by the leak because of the air supply

available in Containment. Mr. Peterson and Mr. Harbor confirmed that the root cause analysis was recently approved by the Corrective Action Review Board and was provided to the DCISC with the September document package.

Dr. Peterson confirmed with Mr. Petersen that for this Station Alert the Emergency Response Center was activated and staffed by both DCPD and San Luis Obispo County personnel and he discussed with Mr. Petersen the DCISC's concern that emergency response exercises generally consist of a scenario which leads to a postulated emergency evacuation which, although possibly a correct decision during an exercise scenario, is not always required in the majority of actual events which involve things which are extremely unlikely to propagate further and therefore it is necessary to be cautious about calling for a precautionary evacuation. Mr. Petersen reported that no evacuations were conducted in connection with the July 28, 2017, Station Alert.

Mr. Petersen confirmed Dr. Peterson's observation that the July 28, 2017, event was the second Station Alert in the history of DCPD and Mr. Petersen remarked the criteria for declaring a Station Alert due to this condition was in the process of being removed from _____ (???) and the NRC's review is now in progress. He remarked the root cause analysis identified the issue of prioritization of a gas leak as an issue to be corrected along with certain other interim measures identified by the analysis.

Mr. Petersen reviewed the NRC's 95001 inspection and reported the subject of the inspection was an undetected Emergency Core Cooling System (ECCS) interlock failure on Residual Heat Removal (RHR) Valve-8982B. He described this as a self-revealing issue which occurred during refueling outage 2R19 when the interlock position switch was found over rotated. This switch allows switchover of cold leg and hot leg recirculation for post-accident, long term, cooling. The NRC conducted the 95001 inspection (root cause effectiveness) during the week of June 12, 2017. After extensive review at the NRC regional headquarters, the NRC concluded that DCPD should be required to perform an additional evaluation in order to close out the issue. Mr. Petersen reported DCPD has now performed additional assessment based on NRC comments and identified an additional improvement opportunity. DCPD will inform the NRC of its readiness for a focused 95001 inspection of the additional assessment results following approval by DCPD's Corrective Action Review Board. Mr. Harbor confirmed the DCISC would be briefed, likely at the next fact-finding, on the additional improvement opportunity identified, including from an operating experience standpoint, when the Corrective Action Review Board has completed its review. The DCISC Members observed that it was most unusual to have an NRC inspection report include a differing professional opinion by one of the members of the inspection team. Dr. Lam stated he was very surprised to learn that, after a period of one year, the White finding remained open after the 95001 inspection, as dealing with that issue should have required the unconditional commitment of resources and the undivided attention and focus of senior management and all members of the plant technical staff. Mr. Petersen stated this matter did have the undivided attention of plant staff and everything possible

in the control of the plant was done to address the inspection requirements and to complete the required cause analysis and the fact the White finding remained open after the 95001 inspection involved an internal disagreement within the NRC. Mr. Harbor stated that PG&E remains open and receptive to all feedback and the issue will be addressed and closed out by the upcoming focused 95001 follow up inspection.

Mr. Petersen closed his presentation with a review of upcoming station activities:

- | | | |
|---|----------------------------|---------------|
| ➤ | NRC Biennial EP Inspection | November 2017 |
| ➤ | NRC TI-191 FLEX Inspection | November 2017 |
| ➤ | 2R20 Refueling Outage | February 2018 |

Dr. Peterson remarked the DCISC is very interested in following FLEX training issues and the particular areas which will be the focus of the NRC FLEX inspection and Mr. Harbor stated the FLEX inspection procedures would be provided to the DCISC for review. Mr. Harbor confirmed that DCPD has initiated FLEX drills in context of emergency planning. In response to Dr. Peterson's request, Mr. Petersen stated that DCPD would make available for the DCISC's review during a future fact-finding some FLEX training videos and **Dr. Peterson observed that it might be useful to have a compendium of parts of the training videos for presentation at a public meeting.**

Mr. Harbor introduced Outage Manager Matt Coward to make the next presentation and reported Mr. Coward has more than 25 years of nuclear experience, holds a Bachelor of Science Degree in Mechanical Engineering and has held a Senior Reactor Operator license and leadership roles in the Engineering and Operations organizations.

Performance during the 20th Refueling Outage for Unit 1 (1R20) Including Key Activities, Performance Indicators, Results Achieved, Fuel and Steam Generator Inspection Results, Open Items and Plans for the 20th Refueling Outage for Unit 2 (2R20).

Mr. Coward reported the 20th refueling outage for Unit 1 (1R20) commenced at midnight on April 23, 2017, and was completed 61 days later on June 23, 2017, at one minute past midnight. He summarized what he described as outage successes including the outage duration and achieving the outage without any Occupational Safety and Health (OSHA) recordable injuries. However, Mr. Coward stated a serious near miss incident resulted in a site clock reset. Mr. Coward reviewed and discussed with the DCISC the scope of work accomplished during 1R20 as follows:

- Outage Scope (Maintenance and Modifications)
 - Permanent cavity seal - a first time project for DCPD.
 - Baffle-former bolt inspection and replacement - a first time project for DCPD with 61 bolts replaced.
 - Control rod guide cards inspection and swap.

- Reactor Vessel cold leg nozzle ultrasonic inspections.
- Containment Fan Cooler Unit (CFCU) 1-5 cooling coil replacement - another first time project.
- CFCU 1-1 and 1-2 motor overhauls.
- Emergency Diesel Generator (EDG) 1-3 major Maintenance Outage Window (MOW).
- Low Pressure turbine "B" replaced.
- High Pressure turbine inspection and replacement of some turbine blades.
- Feed Water Pump 1-1 turbine overhaul.
- 500 kV breaker 632 replacement as part of PG&E's upgrade of its switchyards.
- 230 kV dead end standoff insulators from the Turbine Building replaced.
- NFPA-805 modifications.
- Incipient fire detection modifications.

In response to Consultant Wardell's inquiry Mr. Coward confirmed that NFPA-805 required modifications are now complete for Unit 1 and for Unit 2 with the exception of the incipient fire detection modifications for Unit 2 to be accomplished during 2R20.

Mr. Coward discussed what he described as positive accomplishments during 1R20 as follows:

- Outage Vertical Slice schedule reviews utilized to identify what he described as potential "pinch points" on the schedule.
- Use of the Emerging Issues Process to define problems and identify solutions.
- Vendor performance by Westinghouse for the control rod guide cards, baffle-former bolt replacement, permanent reactor cavity seals and refueling and by Siemens for the turbine generator work.
- Line ownership of As Low as Reasonably Achievable (ALARA) efforts to reduce dose.

Mr. Coward reviewed some of the outage lessons learned during 1R20 with the Committee:

- Refueling equipment performance which delayed core off load and reload. In response to Consultant Wardell's observations Mr. Coward reported that until 1R20 most refueling equipment issues were either related to the spent fuel pool bridge crane or the Containment manipulator crane. During 1R20 refueling equipment issues centered primarily on issues with the transfer cart which operates underwater and is used to upend and lay down fuel assemblies. Mr. Coward reported the spent fuel pool bridge crane for Unit 2 has been upgraded for 2R20. In response to Dr. Budnitz' inquiry Mr. Coward remarked the problems with the transfer cart were related to how the cart was being operated and how the limit switches were set up and the problems were identified as gaps in procedures which have now been revised.

- Greater than the usual number of late scaffolding support requests. In response to Dr. Budnitz' question, Mr. Coward replied that the issue related to a process and did not have an impact on safety.
- Emergency Diesel Generator (EDG) 1-3 Maintenance Outage Window (MOW) execution due to the need for personnel on other critical path activities. Mr. Coward observed that there will be no EDG maintenance outage window for 2R20. In response to Consultant McWhorter's inquiry Mr. Coward reported this work was first time preventive maintenance and involved disassembling the cylinders to inspect the O-rings and there were some unexpected equipment condition issues that the vendor and DCPD were required to address related to whether certain components should be repaired or replaced and he confirmed that for one of these issues there was operating experience available.

Mr. Coward reviewed the goals set and results achieved for 1R20 as follows:

<u>Performance Measure</u>	<u>Goal</u>	<u>Actual</u>
Serious Near Miss Events	0	1
Nuclear Safety Events	0	0
Site Clock resets	0	1
Outage duration (Days)	75	61
ALARA (Person Rem)	55	44.9
Power Ascension (Days)	5	4.125

Mr. Coward described the electrical bus and the breakers involved in the site level near miss event that occurred when electrical maintenance workers were about to connect a ground buggy which was placed in the wrong cubicle to a breaker which had it been racked up it would have ground a live bus. A supervisor nearby recognized the error and stopped the work. The DCPD electrical maintenance organization conducted a stand down and Mr. Coward stated multiple corrective actions will result when the apparent cause evaluation is complete.

Mr. Coward reported during 1R20 relative to nuclear safety, outage safety and defense-in-depth levels, these were maintained above the requirements to ensure key safety functions were satisfied and that Technical Specifications and equipment control guidelines remained in compliance. He reported some of the high risk and infrequently performed tests and evolutions performed as planned during 1R20 included:

- Vital electrical bus transfer and engineered safeguards testing.
- Performance of heavy lifts over the reactor core.
- Movement of reactor vessel lower internals.
- Draining to lowered reactor coolant inventory for reactor disassembly and reassembly with fuel in the core.

- Draining to reduced reactor coolant inventory with fuel in the core for vacuum refill with 230 kV power unavailable.
- Initial criticality of the new reactor core.

Mr. Coward reported that 1R20 was completed with no recordable injuries and this performance represents the sixth consecutive DCPD refueling outage without a recordable injury. During 1R20 he stated DCPD brought in 1,301 temporary workers to assist in outage-related work activities and a number of DCPD employees took on tasks unrelated to their usual assignments.

Mr. Coward then provided an overview of refueling outage 2R20 for Unit-2 which is scheduled to begin in mid-February 2018. He described and discussed with the Committee the planned scope of work during 2R20 which includes the following:

- Control rod guide cards inspection and swap seven of them.
- Residual Heat Removal (RHR) WIB-245 weld overlay.
- High Pressure turbine inspection and blade replacements based on the recent outage experience during 1R20 DCPD is preemptively planning to replace two rows of turbine blades.
- Feed Water Pump 2-1 turbine overhaul which is the same work done during 1R20.
- Reactor Coolant Pump (RCP) 2-4 motor overhaul.
- Incipient fire detection modifications.
- Integrated Leak Rate Test (ILRT) last done during 2R14. This requires approximately 16 compressors to be brought in to pressurize Containment to 50 pounds per square inch to check for leakage through Containment penetrations. Once pressurized, the pressure is stabilized, verified and validated and the check is performed for leaks, following which the pressure is reduced.
- Replacement of 13 flux thimble tubes.
- Snubber Inspection Program.
- Service Cooling Water inlet line repair. The Service Cooling Water System provides cooling water to the non nuclear side to cool main turbine lube oil and main feed pump lube oil and the inlet line will be cleaned and coated with a liner.
- Open circuit protection modifications as performed on Unit-1 with the trip feature cut out during the first fuel cycle to avoid spurious alarms.

- Main Generator robotic inspection in support of the main generator rewind scheduled for 2R21.

In response to Dr. Budnitz' request, Mr. Coward identified the integrated leak rate test and the weld overlays as items about which he has the most concern. He confirmed that 2R20 will have a shorter outage duration than that planned for 1R20.

Mr. David Weisman of the A4NR was recognized. Mr. Weisman inquired whether the main generator robotic inspection is a different evolution from that of the stator replacement work which he understood is planned for refueling outage 2R21 in 2021 when the Unit 2 main generator stator will be rewound. Ms. Harbor and Mr. Coward confirmed Mr. Weisman's observation that the stator rewind is a repair and refurbishment of the existing generator stator.

Ms. Simone Malboeuf was recognized. Ms. Malboeuf inquired where DCPD obtained the 1,300 temporary workers used during 1R20. Mr. Coward and the Committee Members replied that these workers originate from a wide spectrum of sources with some highly trained specialty workers traveling from plant to plant to engage in refueling outage work which requires their specialized skill sets, some are residents of the local area, some are PG&E employees who are not DCPD employees, and some are employees of the vendors engaged to perform work during the outage.

Mr. Coward closed his presentation by screening a video of the work above the 140 Level in Containment to replace the cooling coils on the Containment Fan Cooler Units which was accomplished using a spider crane. Mr. Coward commented that while in Containment workers wear protective equipment, although by industry standards Containment at DCPD are extremely clean with very little radioactive contamination but in order to protect its workforce DCPD conducts all work in Containment under the assumption that everything is contaminated.

Mr. Harbor introduced and requested Mr. Tom Jones, Director of Strategic Initiatives, to make the next informational presentation. Mr. Harbor reported Mr. Jones holds a Bachelors' Degree in Political Science and Government and has more than 20 years' experience in government relations including work within the Nuclear Generation organization.

Update on the Joint Proposal.

Mr. Jones stated Administrative Law Judge (ALJ) Allen's Proposed Decision concerning the CPUC's disposition of the Joint Proposal has not been issued and is expected sometime later this month. He stated the final public participating hearings were held in two sessions in San Luis Obispo on September 14, 2017, and in response to Dr. Budnitz' inquiry, Mr. Jones reported about 125 persons attended and approximately 50 persons spoke including representatives of local agencies and cities with the greatest number of those comments coming in support of the administrative record while a few speakers urged either the continued operation of the plant or its immediate closure. Areas of interest included:

- Emergency Planning
- Employee Retention
- Continued Operations
- Future Land Use
- Community Settlement Funds

In response to Dr. Lam's query Mr. Jones stated ALJ Allen and the CPUC President Picker, who served as the assigned Commissioner for the proceeding, previously made a commitment to the local community to conduct the public participation hearings in the local area although there was no requirement that they do so. Dr. Lam remarked this speaks to the level of attention the presiding officer and the assigned Commissioner are giving to the matter of the Joint Proposal.

Mr. Jones remarked a key element of the Joint Proposal concerns employee engagement and the Excellence Plan, a document of some 25 pages, developed to maintain employee focus and reevaluate certain projects. He described as a key strategy the engagement of all employees at the station and Mr. Jones and Engineering Director Mr. Adam Peck have now spoken with more than 750 employees face-to-face and they expect to contact approximately 1,000 DCPD employees in this effort with a presentation and to hear their concerns and respond to their questions. The retention program and employee retraining initiative are of particular interest to employees. Mr. Jones remarked that during these presentations employees are provided with information on how to access information on the CPUC's consideration of the Joint Proposal.

Mr. Jones displayed and discussed with the Committee a graphic depiction showing elements of the Excellence Plan which is used in briefing employees including project schedules, preventive maintenance, and work modifications to support operation through 2025, and the strategies for employee retention and schedules for redeployment training. Mr. Jones described the retention programs as including Tier 1 and Tier 2 bonuses along with severance pay as financial incentives to encourage employees to remain at DCPD. He reported that PG&E is hopeful that a final decision may be issued by the CPUC by December 2017. In response to Consultant McWhorter's question Mr. Jones confirmed as the Joint Proposal has not yet been approved no payments have been made to any employees under the Tier 1 incentive. If a final decision on the Joint Proposal is delayed until 2018 Mr. Jones confirmed this might require two payments to be made in a single year which would have some impact on financial planning for employees as the Tier 1 financial incentive is scheduled to be paid quarterly in advance but if an employee does not stay for the full Tier 1 term they would be required to payback a prorated portion.

Mr. Jones presented and discussed a second graph showing the trend in employee's acceptance of the DCPD employee retention agreement. He reported that initially 86% of DCPD employees entered into these agreements. He reported since the announcement on the Joint Proposal was made there have been 200 job offers made only five of which were turned down and the rate of acceptance of employee retention agreements has now increased to 92%. He reported that fewer of DCPD's employees with 20-25 years of service and retirement eligibility

elected to participate in the retention agreement and some early career employees opted not to enter into retention agreements as they do not expect to remain at DCPD for five or ten years. Since the retention agreements were offered 77 employees have separated from DCPD employment with 22 having signed retention agreements. Of these, the majority were due to retirement and, in response to Dr. Budnitz query, Mr. Jones reported the attrition rate for DCPD employment is about what it was prior to the announcement of the Joint Proposal.

Mr. Jones remarked that when the Proposed Decision is issued, he commended it to the DCISC for its consideration, evaluation, and possibly for a communication to the CPUC expressing the DCISC's perspective.

Overview of the Decommissioning Process and Initial Planning.

Mr. Jones continued his presentation to the Committee and stated he would provide an update on matters related to decommissioning the plant. He reported in May 2017 the CPUC issued a decision on PG&E's Nuclear Decommissioning Cost Triennial Proceeding (NDCTP), a proceeding which is before the CPUC every three years as a rate case to assess the requirement to fund the full decommissioning of the facility. Mr. Jones reported PG&E did not receive the increase it sought in the 2017 NDCTP and remains approved in the amount of \$2.4 billion which Mr. Jones contrasted with the \$4.4 billion approved for decommissioning the San Onofre Nuclear Generating Station (SONGS). He remarked the decommissioning of PG&E's Humboldt Bay Nuclear Power Plant (HBPP) was determined to be going well and the company has recovered nearly all of the \$400 million spent during the prudency review process but the support provided by PG&E for the increase and the estimate of costs for DCPD decommissioning was determined not to meet the standards for the burden of proof required by the CPUC.

Mr. Jones reported on PG&E's efforts and activities to date concerning DCPD decommissioning as follows:

- All staff positions filled - consisting of 24 persons led by Senior Director Loren Sharp who also heads up the HBPP decommissioning efforts. The sole job of the decommissioning project staff at present is to properly inform the next NDCTP filing as to cost. Mr. Jones remarked that PG&E has determined using generic formulas for DCPD decommissioning costs is insufficient due to California and DCPD-specific requirements including that all low level waste must be transported out of state and matters such as whether removal of the breakwater from Diablo Cove will be necessary or required. In response to Dr. Budnitz' inquiry Mr. Jones stated that staffing is now adequate for the NDCTP-related cost estimate work but once permitting activity begins it may be possible to reduce the size of the decommissioning organization at the plant as other divisions within PG&E will become involved.
- Informing 2018/19 NDCTP - with the first filing with the CPUC due in 2018 or 2019.

➤ All bundles for requests for proposals for decommissioning-related work have been issued to vendors with experience in nuclear plant decommissioning. Mr. Jones reported there are three approaches to decommissioning a nuclear power plant: (1) for the utility to self-perform the work; (2) a hybrid approach similar to that used at HBPP where specialized contractors are brought in and work with the utility; and (3) to utilize a decommissioning oversight contractor, similar to what SONGS is doing. He reported that no decision has yet been made as to the approach to be used at DCP. Mr. Jones reported only ten U.S. nuclear plants have been successful so far in retiring their 10 CFR Part 50 Licenses from the NRC which he described as PG&E's ultimate goal for DCP. In response to Consultant McWhorter's inquiry, Mr. Jones stated that for retirement of the Part 50 License, although there are different standards for cleanup, all radioactive components would need to be removed from the site and the site restored and release of the site approved for other uses.

Mr. Jones described the key regulatory project milestones as follows:

- Issuance of the Proposed Decision on the Joint Proposal, including the proposed settlements therein, will commence a public comment period.
- Subsequent CPUC Hearing will be held on the Final Decision on the Joint Proposal.
- Diablo Community Engagement Panel following issuance of the Final Decision will provide feedback from a cross-section of members of the local community and a recruitment committee is now considering candidates and an application process.
- 2018/19 Filing of the NDCTP with possible approval late 2020.

Mr. Jones reported other issues will include the future uses of the land, the possible repurposing of assets, as well as transportation of materials through the community. Mr. Jones described the decommissioning process as, essentially, a large construction project in reverse which will have impacts under the California Environmental Quality Act (CEQA) as well as the need for permits from both the State Lands Commission and the California Coastal Commission and he remarked that PG&E has worked through issues with those regulatory bodies in the past and realizes that efforts to obtain these permits will be multiyear and efforts must begin soon if PG&E wishes to commence active decommissioning right after cessation of operations.

Mr. Jones, in response to Consultant McWhorter's request, replied that DCP is in the process of gathering information and posing inquiries on decommissioning from not only HBPP but also the Zion, Crystal River and SONGS nuclear power plants and he offered to share information on these efforts with the DCISC at a future fact-finding. He remarked that two of the lessons learned from the decommissioning of California plants concern the need to have permits in hand as the cost for safe store can be quite expensive, and that there are a number of different technologies available for reactor full segmentation.

Dr. Peterson stated he found Mr. Jones presentation quite helpful and the DCISC will be closely following DCP's progress as there is clearly the potential for a substantial impact on plant operations from decommissioning activities prior to shut down but the Committee will need to assess and determine whether there may be an appropriate role for the Committee post-shutdown. The Chair then called for public comments on Mr. Jones presentation.

Ms. Rochelle Becker, Executive Director of the A4NR, was recognized. Ms. Becker requested from Mr. Harbor a copy of the power point presentation used by Mr. Jones. She also reported that the A4NR website at www.A4NR.org has a video available from the public participation hearings.

Ms. Jane Swanson of San Luis Obispo Mothers for Peace was recognized. Ms. Swanson stated, given the three decommissioning scenarios described by Mr. Jones, she would appreciate information and verification of who would remain responsible for the radioactive waste in the spent fuel pools and the spent fuel storage casks each instance. Dr. Budnitz remarked that there is also a third category of waste which includes contaminated objects. Ms. Swanson stated that following cessation of operations there should still be an important role for the DCISC to play because the radioactive waste will still be located at the plant site and the public deserves to have independent eyes on that. Mr. Jones responded that although PG&E has yet to decide which of the three decommissioning strategies he described would be adopted for DCP, as long as PG&E holds the license under either 10 CFR Part 50 for power operations, or the separate license under 10 CFR Part 72 for dry cask storage, PG&E will remain responsible for the fuel. He reported that PG&E continues to hold both licenses for HBPP which ceased operation in 1976. Mr. Jones reported that when low level waste is shipped off the plant site, the company engaged for its transportation takes over responsibility for the waste under a license from the NRC under 10 CFR Part 61. Dr. Budnitz remarked that although remote there was a possibility that waste could be sent to a Department of Energy site which employs a different regulatory regime. Mr. Jones reported that costs and strategies would be reviewed during the next Nuclear Decommissioning Trust Triennial Proceeding.

Dr. Peterson commented that earlier during this public meeting the Committee discussed the matter of whether it should have a post-shutdown role in reviewing decommissioning and that such a role would necessarily result in a reduced scope **but it would be worthwhile to follow up and identify the differing categories of waste that will be produced during decommissioning and their respective safe disposal paths and to ensure that there will not be any stranded waste left at the site.**

Dr. Budnitz remarked the DCISC at this time is not prepared to make a determination on whether it should seek a post-shutdown role to review decommissioning from the CPUC. Part of this determination will necessarily include the process of how the Restated Charter from the CPUC might be changed if that should prove necessary. Dr. Budnitz reported the DCISC would also explore the idea of engaging a consultant with expertise in decommissioning to inform its discussion and determination. Dr. Peterson stated his perspective may be somewhat different from Dr. Budnitz' as the Restated Charter, if taken literally, may lead to the conclusion that the

DCISC does not have a post-shutdown role and the Committee may not be in the best or in an appropriate position to decide or to recommend whether it should have a continuing role. Dr. Peterson observed that is a policy decision and the DCISC's role is to implement policy not to involve itself in policymaking. He stated he supported the DCISC playing a role in providing whatever useful information it can to the CPUC and to the entities who appoint its members but ultimately it is a policy decision that needs to be made by the CPUC and to include all the stakeholders as to whether the DCISC should continue post-shutdown. Dr. Budnitz confirmed the earlier consensus of the Members that their current work in reviewing issues and planning associated with decommissioning while the plant is still operating is fully within the mandate of the Restated Charter.

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis stated that an objective party to review decommissioning issues post-shutdown was necessary and she questions why the Committee should not have input into that matter. Dr. Peterson replied and reiterated his view that the role of the DCISC is not as a policymaking or policy advising body but rather to serve as a source of the best possible information to the appropriate decision making bodies. Dr. Peterson remarked his personal opinions, or those of the other DCISC Members, on how the United States has managed its nuclear waste policies have never entered into their decisions as members of the DCISC and he stated it is important that the policy process be allowed to play out in a transparent way. Dr. Budnitz stated that he did not agree with Dr. Peterson at this time but he further remarked that the only time the three Members can discuss and articulate their views on this matter is during a public meeting and that an exploration of the perspective of the value and benefits from having the DCISC continue post-shutdown would properly and correctly need to be balanced by a description of why the plant could be decommissioned safely, as many other plants have been, without the need for a committee such as the DCISC.

Ms. Simone Malboeuf was recognized. Ms. Malboeuf stated that her safety concern was due to the cyber attacks that have been reportedly perpetrated against nuclear power plants in the United States and she questioned whether DCPD has a plan for addressing the issue of computer system hacking and she observed that this could be a concern even after DCPD shuts down. Dr. Peterson stated that while the DCISC does not have oversight of or review security *per se* the Committee does review security-related issues in context of their interface with plant safety. He stated there is fairly strong alignment between good cyber security practices and those promoting safe and reliable operations. Dr. Peterson and Dr. Budnitz observed the architecture of plant protection and control systems provides a significant degree of separation from administrative functions and the attacks against U.S. nuclear power plants that have occurred so far have been directed on the administrative systems not plant protection and control systems. Dr. Peterson reported DCPD has been actively engaged in reviewing and upgrading the cyber security for all of its computer systems including making physical changes to modify hardware and make hacking more difficult and increase the reliability of these systems. He observed that the spent fuel storage casks employ no control systems and utilize passive safety features as do new reactor designs such that the manner of their activation is by disconnection from external sources of power and from digital control systems. Dr. Peterson stated that this was indicative of a

better way to design a reactor system. In response to Ms. Malboeuf's concern about an attack on the electric grid system Dr. Peterson replied DCPD is designed to shut down safely without access to the grid or to any source of off-site power and loss of access to the grid can occur for a number of reasons unrelated to a cyber attack.

Mr. Harbor thanked Ms. Malboeuf for her comments and he reported DCPD has implemented a Cyber Security Program and that relative to the plant safety systems that affect the ability of the reactors to shut down and to initiate a safety response, the computer systems associated with safe shut down are not connected to what is commonly known as the internet or the grid and are stand-alone systems. Mr. Harbor reported DCPD has had a team undertaking an extensive review of what are termed critical digital assets and has now employed what he termed blocks to prevent any interaction with other systems that could have an impact on plant safety and this includes protection from an internal attempt to disrupt a digital system. Mr. Harbor reported these efforts are part of the NRC inspection regime to ensure they are implemented and effective and DCPD continues to focus on cyber security and to work to improve its digital systems.

XVIII ADJOURN EVENING MEETING

The Chair adjourned the afternoon meeting of the Committee at 7:15 P.M.

XIX RECONVENE FOR MORNING MEETING

The October 19, 2017, morning public meeting of the Diablo Canyon Independent Safety Committee was called to order by its Chair, Dr. Peter Lam at 9:00 A.M. Dr. Lam welcomed those persons present in the audience and watching the proceedings on live streaming video. Dr. Lam requested any of the members who wished to make remarks to do so at this time.

XX COMMITTEE MEMBER COMMENTS

The Chair reported that he was advised that the State of California would be conducting an earthquake preparedness drill at 10:19 A.M. this morning.

XXI PUBLIC COMMENTS AND COMMUNICATION

The Chair reviewed the invitation to address the Committee on matters not on the agenda for this public meeting and invited any comments from members of the public who wished to address the Committee to do so now. There was no response to this invitation.

XXII CONSENT AGENDA

The first item on the Consent Agenda was approval of the Minutes of the Committee's June 7-8, 2017, public meeting held in Avila Beach, California. A draft of the June 2016 Minutes was included in the public agenda packet. The members and consultants reviewed

the Minutes and provided revision of certain references to be included in the final version of the June 2017 Minutes and discussed follow up actions to be taken, provided clarification to legal counsel concerning typographical errors and the accuracy of certain references in the Minutes which were included in the public agenda packet for this meeting, and editorial comments and changes were received concerning the draft of the June 2017 Minutes.

Minutes of the Committee's public meetings, in their final accepted form, become part of its Annual Reports on Safety of Diablo Canyon Nuclear Power Plant Operations (Annual Report). On a motion by Dr. Budnitz, seconded by Dr. Peterson, the Minutes of the Committee's June 2017 public meeting were accepted subject to inclusion of the changes provided to the Committee's Assistant Legal Counsel. The June 2017 Minutes will be part of the Committee's 27th Annual Report.

The second item on the Consent Agenda concerned documents provided to the Committee. Dr. Lam reported that the Committee conducts its business in a transparent fashion and the public agenda packet included lists of all the documents provided to the DCISC for review by PG&E since the last public meeting of the Committee in June 2017.

XXIII INFORMATION ITEMS BEFORE THE COMMITTEE (Cont'd.)

The Chair requested Mr. Harbor to introduce the next presenter. Mr. Harbor introduced Director of Technical Services Mr. Jearl Strickland and reported Mr. Strickland holds a Bachelor of Science Degree in Civil Engineering, a Master's Degree in Business Administration and has more than 35 years of nuclear experience including leadership roles in Engineering and Project Management organizations.

Update on Spent Fuel Storage Technical Issues Including PG&E & Industry Activities Related to Study of Potential Corrosion of Multi-Purpose Canisters (MPCs), Lessons Learned from Spent Fuel Activities at Decommissioned Facilities (including SONGS), and the Potential Implications for Accelerating Spent Fuel Transfer to the ISFSI and Decreasing Spent Fuel Inventory.

Mr. Strickland reported in this presentation he would be providing a program status update of activities related to the evaluation for external corrosion of multi-purpose canisters (MPCs) storage systems used in the United States and in Europe and of decommissioning considerations including accelerating used fuel transfer to the Independent Spent Fuel Storage Installation (ISFSI). Mr. Strickland displayed photos of the power plant showing the Fuel Handling Building containing the plant's two spent fuel pools (SFP) serving Units 1 and 2 and the ISFSI, which is located approximately one-half mile from the coast at an elevation of 310 feet above sea level. He also displayed a photo of one of the SFPs and reported that when fuel is discharged from the reactor, after approximately three operational cycles, it is placed into storage in the respective SFP and after approximately seven years, as required by DCP's current license, it becomes a candidate for storage at the ISFSI.

Mr. Strickland displayed a photo of the Hi-Storm dry cask storage system in use at DCPD which is manufactured by the Holtec International firm. He reported dry cask storage is used at most U.S. nuclear power plants. Fuel is stored in sealed MPCs and the MPCs are placed in a steel and concrete over pack for radiation shielding and protection. At DCPD for reasons of seismic safety the over packs are bolted to an eight-foot thick steel reinforced concrete pad and Mr. Strickland stated DCPD is the only facility that utilizes this type of arrangement for its MPCs. In response to Dr. Budnitz' inquiry, Mr. Strickland reported the MPC can also be used for interim storage as well as for transportation purposes to a longer-term storage facility. Mr. Strickland reported the over pack is comprised of two steel vessels with concrete between them to provide shielding. The MPC with the over pack weighs approximately 175 tons while the weight of an MPC and a transportation-type package is approximately 125 tons.

Mr. Strickland displayed a photo of the ISFSI and reported the ISFSI can hold all fuel produced from the plant's 40-year license and was built in modules, with 7 pads each of which holds up to 20 casks. Currently, three pads are in operation holding a total of 49 casks. Each MPC holds 32 fuel assemblies. DCPD completed pads 3 through 7 in 2014 when it was determined that the centralized spent fuel repository planned for Yucca Mountain, Nevada, would not be available in the foreseeable future.

Mr. Strickland stated with reference to the evaluation of the MPCs for external corrosion to date, no stress corrosion cracking has been identified on any MPC in the U.S. Activities at DCPD related to the potential for corrosion cracking include the Electric Power Research Institute (EPRI) publication of the DCPD ISFSI MPC Inspection Report in August 2016 (EPRI Report). DCPD volunteered to participate in the EPRI inspection study which did identify the presence of chloride crystals on the exterior surface of a MPC but found no corrosion. Mr. Strickland reported some initial MPC material lots were more susceptible to external corrosion, including locations around welds which have the potential for higher stresses which, combined with the presence of chloride and moisture, can create a corrosive environment. Mr. Strickland reported at present there is insufficient chloride concentration to initiate corrosion and no corrosion was found during inspection of MPCs. Mr. Strickland reported that during its early life the temperature of an MPC is very high, to a degree that does not allow condensation to develop but he commented it is important that the MPCs be continually monitored to address the presence of the elements which could induce cracking.

Mr. Strickland reported the stainless steel material used to fabricate the MPCs has changed from A304 stainless steel to A304L stainless with a lower carbon content to A316L stainless which is used today to provide even better protection from chloride induced stress corrosion cracking (CISCC).

The EPRI published its Aging Management Guidance for Potential Chloride Induced Stress Corrosion Cracking of Welded Canisters in March 2017 and he provided a copy to the DCISC of this document. The report provides recommendations for aging management and is currently under review for implementation and likely will be incorporated during ISFSI License Renewal. In response to Consultant McWhorter and Dr. Budnitz' requests, Mr. Strickland

identified key aspects of the aging management program to include robotic inspection techniques, types and frequencies of inspections, and implementation of aging management protocols as well as inclusion of remedial actions in the event something is discovered during an inspection. Mr. Strickland reported that while the NRC license for operation of a nuclear power plant is issued for a 40-year duration, the license period for an ISFSI facility is 20 years. The license for the DCPD ISFSI will expire in 2024 and the plant will begin the relicensing process very soon. Mr. Strickland reported DCPD is actively participating in EPRI's Extended Storage Collaboration Program and in EPRI's Chloride Induced Stress Corrosion Cracking (CISCC) and Non Destructive Examination Committees as well as in American Society of Mechanical Engineers' (ASME) Section XI and Non Destructive Examination (NDE) Code Committees. He confirmed Dr. Budnitz' observation that typically the EPRI submits its studies to be evaluated by the NRC and, if endorsed by the NRC, the EPRI studies can be used by the NRC in regulation of its licensees. PG&E personnel serve on committees that are evaluating and implementing industry standards for MPC inspection techniques with technologies and criteria to be proposed for adoption in the ASME Boiler and Pressure Vessel Code and accepted by the NRC under a code case.

Mr. Strickland identified the spent fuel storage systems currently licensed by the NRC including:

- AREVA Trans-Nuclear - NUHOMS
- Holtec – HI-STORM and HI-STAR
- NAC International – MAGNASTOR

and the storage system used in Europe:

- GNS Castor (storage and transportation)

The Holtec Hi-Star System used at PG&E's HBPP for storage and potentially for transportation consists of a welded MPC containing fuel with top and bottom lids bolted in place. The over pack is constructed of steel vessels with an internal neutron shield. The Hi-Star System uses lead instead of concrete in the interstitial space between the vessel walls and this results in a smaller, lighter MPC than those used at DCPD. In response to Consultant Wardell's inquiry Mr. Strickland reported that in decommissioning the plant and retiring the SFPs, without a cask transfer facility and with only 5 MPCs, the decision to use Hi-Star made sense for HBPP. The Holtec Hi-Storm System used at DCPD consists of inner and outer steel vessels 1" thick with 26" of high density concrete used for shielding. The Hi-Storm System uses passive cooling and is seismically anchored for use at DCPD. The weight of the Hi-Storm System does not lend itself to being able to be transported and a Hi-Star storage container or another transportation container would be used to move the MPC for shipment off site. In response to Consultant McWhorter's inquiry, Mr. Strickland reported that at DCPD a transfer cask is used to transport the MPC from the Fuel Handling Building to the ISFSI with transfer of the MPC into the over pack being accomplished at a cask transfer facility located just outside the ISFSI and PG&E is currently considering procuring a second transporter and transfer cask in order to use one with each SFP.

Mr. Strickland stated the European GNS Castor Casks are very different in that they are used for both transport and storage and do not utilize a separate MPC. The GNS Castor Cask consists of a monolithic body made of cast iron and uses bolted closure lids. Axial boreholes are drilled into the cask wall and filled with polyethylene moderator rods. Mr. Strickland observed that several European nations reprocess spent fuel for reuse and the GNS Castor Casks are reusable.

With reference to plant decommissioning Mr. Strickland stated the Joint Proposal to retire DCP requires PG&E to conduct an evaluation of optimizing the time that spent fuel remains in the SFPs in wet storage. Two studies are currently evaluating the options which include saving older fuel assemblies to mix with recently discharged fuel assemblies and possibly thereby shortening the duration of decommissioning. This is due to the fact that recently discharged fuel from the last few operational cycles will be hotter and the mix of older fuel within an MPC should enable recently discharged fuel to be taken out of the SFPs sooner. Mr. Strickland displayed a graph showing the spent fuel storage rack use and current forecast for SFP inventory. He reported the SFPs are currently essentially at their minimum inventories following the last refueling outage and another spent fuel loading campaign is planned for summer 2018 for 8 casks.

Mr. Strickland stated after the 2018 loading campaign a decision will be made as to whether to continue with the two additional planned loading campaigns in order to be able to have the last discharged fuel cool to the point where it can be off loaded to dry cask storage within a time line of 2033 or 2034. Preliminary results of studies by Holtec and Trans-Nuclear indicate that if fuel movement is delayed this may shorten the window to four to five years instead of from between seven and nine years for the discharge of the final fuel to the ISFSI. Dr. Peterson observed that during decommissioning there is a key point where irreversible action is taken to place the SFPs out of service and at that point the option to reopen and inspect the inside of the MPCs becomes much more difficult. Mr. Strickland agreed that this would need to be part of the decision making process, as would the possibility of a regional consolidated interim storage (CIS) facility becoming available. Dr. Peterson noted that two applications for a CIS facility are currently pending before the NRC but one application has now been placed on hold due to lack of funding. Dr. Peterson observed that there is currently no statutory authority for the Department of Energy (DOE) to use such a facility if it were to become available. Dr. Peterson observed and Mr. Strickland agreed that with the risks associated with completing decommissioning and leaving the spent fuel on site without access to a SFP it would be prudent to consolidate storage sooner rather than later to reduce risk but without the statutory authority for the DOE to use a CIS to receive fuel from decommissioned reactors it is unlikely to attract private sector investment. Dr. Peterson remarked that likely the best option for ratepayers is to initiate decommissioning activities very early on and once the Auxiliary Saltwater (ASW) System is shut down as that effectively precludes further use of the SFPs.

In response to Dr. Budnitz' query Mr. Strickland confirmed that to date all fuel transferred from the SFPs to the ISFSI has been undamaged and Mr. Strickland reported that there is presently no fuel in either SFP which must be considered as failed fuel for purposes of

dry cask storage. Mr. Strickland confirmed that DCP's license for the ISFSI provides for a number of failed fuel assemblies to be stored and located in separate containers within a MPC but to date that license provision has not been required. In response to Dr. Lam's inquiry, Mr. Strickland confirmed DCP presently has the capability to open a MPC as this was part of the NRC's licensing requirements and a demonstration of this capability was required to obtain the license for the ISFSI and he confirmed this capability will be retained until the last SFP is shut down. In response to Dr. Lam's follow up inquiry Mr. Strickland stated that currently there is no process licensed for encapsulating a MPC in the event of some internal failure. Mr. Strickland confirmed Dr. Lam's observation that, as far as optimizing the expedited transfer of all spent fuel to the ISFSI, the time under consideration would represent a shortening of that period by four or five years. Mr. Strickland stated his personal opinion that if possible this would be a worthwhile savings as while both wet and dry storage systems are safe, once all the fuel is in dry storage the opportunity is afforded to stop ASW operation and to not rely on heat exchangers or other processes to remove heat from the SFPs and the fuel assemblies, as well as eliminating the cost to keep the SFPs in operation which adds to the overall cost of decommissioning. Dr. Budnitz confirmed Mr. Strickland's observation and he commented that while both wet and dry storage systems are safe, dry storage is the safer option. Dr. Peterson remarked that while the Holtec MPCs are licensed for transportation they have never been transported and if any issues were to emerge the lack of a SFP would limit the ability to correct any problem, including the potential need to use a smaller transport canister, so it would be better were the MPCs able to be moved to a CIS while a SFP was still in commission.

The Chair requested public comment on Mr. Strickland's presentation.

Ms. Linda Seeley, representing Mothers for Peace, was recognized. Ms. Seeley stated Mothers for Peace oppose the concept of a CIS as there is a perception that moving the spent fuel off site means that the risks need no longer be dealt with. The areas of the country which might serve as the site for a CIS represent areas where she stated "everyone lives" due to the hazards posed by the presence of the spent fuel and by the aggregation of storage canisters from various sites without the ability or possibly the motivation by the site regulator to properly maintain or inspect the contents. She stated there are questions as to the effect on the MPCs from the rigors of transportation as they are massive objects weighing approximately 125 tons. Ms. Seeley reported that her group believes the most responsible and ethical alternative is to keep the storage casks within California because with the state's political power they will be watched. She remarked that facilities such as those employed in Germany where the fuel casks would be stored in hardened bunkers with constant temperature and 24-hour radiation monitoring would be a preferred alternative. Ms. Seeley reported that Mothers for Peace would like to see DCP become a model for the type of storage she suggested in order that PG&E would continue to keep the community safe. She remarked that the Joint Proposal represented evidence of PG&E's hard work to keep the community safe and this would be the next phase of that effort. Ms. Seeley stated that the MPCs at DCP need to be taken care of now with 24-hour radiation monitoring in place. Dr. Budnitz commented that, while the safety of the MPCs which are and will be on site at DCP during its operational period is within the remit to the DCISC from the

CPUC, issues such as the transportation to and availability or use of a CIS repository are outside of the Committee's remit.

Ms. Donna Gilmore of the group San Onofre Safety was recognized. Ms. Gilmore stated her background is as a systems analyst and she has been studying nuclear waste containment for some years now including having co-written a paper with Dr. Marvin Resnikoff on high burn-up fuel and she has worked closely with material engineers, nuclear engineers and nuclear physicists on these issues. She reported during a workshop on nuclear power conducted by the California Energy Commission Dr. Lam had invited her to attend this public meeting of the DCISC and to share information. Dr. Lam stated Ms. Gilmore was involved in early research on the issue of chloride induced stress corrosion cracking of MPCs and her research has led to increased public focus on this issue. Dr. Lam thanked Ms. Gilmore for her attendance.

Ms. Gilmore stated the information she would present to the Committee was available on the website www.sanonofresafety.org and all the information she would provide has links to government of scientific authority. Ms. Gilmore stated her involvement in nuclear power issues came about because of NRC statistics concerning complaints from employees regarding failure of their employers to address their concerns and that everything presented by the industry or a utility cannot be taken at face value.

Ms. Gilmore remarked the MPCs being used by the nuclear industry are designed for 20 years of operational life but the NRC has now made a decision that they may have to remain at plant sites indefinitely. She observed DCPP is subject to an ocean environment and as the MPCs are only ½ inch thick they are susceptible to cracking. She described the MPCs as thin-walled and inserted into thick concrete over packs and she noted that the air vents on the over packs were not shown in Mr. Strickland's presentation or discussed previously and these vents afford conduction cooling to the MPCs. Ms. Gilmore remarked that all the types of stainless steel described in Mr. Strickland's presentation were susceptible to stress corrosion cracks due to salt air. Ms. Gilmore stated the MPCs cannot be inspected, cannot be repaired, and cannot be transported with cracks nor can they be monitored to prevent leaks or to provide a warning were something significant to occur. She remarked this is contrary to basic safety requirements for any system.

Ms. Gilmore reported the EPRI Report referred to by Mr. Strickland found sufficient sea salt and moisture to enable the deliquescence process to commence. She stated her inquiries with EPRI revealed that only about 10% of the surface of an MPC can be tested for temperature or for the presence of corrosive particles and the EPRI Report found the MPCs were susceptible to cracking. Ms. Gilmore stated the President of the Holtec International firm has repeatedly confirmed that it is not practical to repair the Holtec MPCs and he further confirmed that if cracked the MPC would need to be replaced and she observed that without an available SFP that is not possible. Ms. Gilmore stated NRC Regulation (NUREG) 1927 Revision 1 contains the current MPC aging management plan and it provides that a crack of 75% or greater means the MPC must be taken out of service and she questioned how PG&E or any licensee might comply with that regulation without a SFP in service.

Ms. Gilmore observed there are 49 MPCs currently stored on site at the DCPD ISFSI and of these 2 were checked for salt particles and temperature with conditions found to meet those for chloride induced stress corrosion cracking although it is not known if any cracking has actually occurred as there is no way to inspect for same and she stated that she does not believe there will ever be the ability to inspect for cracks with the MPCs designed for use at DCPD. Ms. Gilmore observed that should a crack start it could propagate through the MPC wall within about 16 years. She questioned the wisdom of PG&E's plans to purchase more of the Holtec MPCs. She stated that the San Onofre Nuclear Generating Station (SONGS), like DCPD, does not have a plan to handling cracking or leaking MPCs. She stated that other than use of a SFP, a "hot cell" represent the only other replacement option and this is very expensive to implement and does not presently exist at either facility nor are there plans for same.

Ms. Gilmore stated the plan for transporting the Holtec Hi-Storm MPCs includes use of a transportation cask which would be reused. She observed that when the NRC approved the use of thin walled MPCs it ignored aging issues by assuming that nothing would go wrong in the first 20 years but did not look at the issues beyond 20 years. She reported that high burn-up fuel was used at SONGS and is used at DCPD and this high burn-up fuel when placed in dry storage can experience damage to the fuel's cladding and the NRC issued requests for information when it was considering licensing the Holtec casks on obtaining assurance that high burn-up fuel would not be shipped without verification that its cladding was undamaged. She stated her understanding that there was a total of 13 damaged fuel assemblies at DCPD as of 2013.

Ms. Gilmore reported that plants are not required to conduct continuous radiation monitoring of the dry cask stored fuel and there is no warning mechanism prior to a leak occurring. She commented that after the SFPs are emptied, as at the Rancho Seco Nuclear Generating Station (Rancho Seco) and at HBPP, their radiation monitors were removed and emergency planning was eliminated. She reported SONGS, DCPD, HBPP and Rancho Seco all use thin-walled canister systems with HBPP's MPCs placed within thick-walled transport casks and stored below the ground.

Ms. Gilmore reported that French and German nuclear power plants use thick-walled casks made of ductile cast iron which are 19 ¾ inches thick as compared to some NRC-approved casks which are 14 ½ inches thick. She reported Germany does not reprocess spent fuel and stores the casks in concrete buildings for environmental and security protection and the Germans have not experienced cracking issues. She recommended that the DCISC look thoroughly into the casks used in both Germany and France and make a recommendation for the use of the best available technology. She reported the casks used at the Fukushima Nuclear Power Plant in Japan survived the earthquake and the tsunami but when they were opened it was found that the aluminum fuel baskets that hold the fuel assemblies would not last their expected operational lifetimes of 60 years and she commented that aluminum baskets are in use in the U.S. without any idea of how they are performing. Ms. Gilmore reported that the MPCs in use in the U.S. are not designed to be opened and, to the best of her knowledge, not one loaded thin-walled MPC

has ever been opened in a SFP. Dr. Peterson commented that some older thin-walled MPCs in Idaho have been opened and inspected using a SFP.

Ms. Gilmore observed that as DCP's license from the NRC for the ISFSI expires in 2023 there is an opportunity to do something before that date. She commented that the weight of the transport casks for the Holtec Hi-Storm system is 225 long tons not 125 long tons as reported by Mr. Strickland and the Hi-Star transport casks weigh 190 long tons. She commented that the California Coastal Commission requires that the casks be transportable and that remains an issue to be addressed. She remarked that having an approved transport cask does not mean that you can move an MPC as there are additional requirements from the NRC.

The Chair inquired of Mr. Harbor whether PG&E wished to make a response to Ms. Gilmore's comments. Mr. Harbor stated that no response would be offered at this time.

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis stated she has heard two sides of the issue and questioned what would happen next. Dr. Budnitz replied that the topic presented by Mr. Strickland and the comments made by Ms. Gilmore describe issues the DCISC has and will be actively pursuing. Dr. Lam reported that Ms. Gilmore's efforts were some of the earliest efforts to make the public aware of this important issue. Ms. Lewis inquired as to Mr. Strickland's statement that the casks were one inch thick and whether that was an accurate statement based on Ms. Gilmore's comment that they were one-half to five-eighths-inch thick. Mr. Strickland stated his statement that the thickness was one-inch was in reference to the storage over pack, which for both the Hi-Storm and the Hi-Star systems are comprised of two walls each of which is one-inch thick carbon steel with approximately 26-inches of high density concrete between the two walls for shielding. The Holtec MPCs are one-half inch thick but, driven by comments made by Ms. Gilmore, SONGS has asked Holtec to increase the MPC thickness for its casks to 5/8ths inches. Ms. Gilmore stated that SONGS made that decision due to awareness of the salt issue and her recommendation was to increase the thickness to between 10 and 19¾ inches.

Ms. Linda Seeley of Mothers for Peace was recognized. She inquired whether the MPC identified in 2014 the EPRI Report as having conditions for chloride induced stress corrosion cracking has been re inspected. Ms. Seeley also inquired about the frequency with which radiation at the ISFSI is measured as she has been told it is constantly being measured. Mr. Strickland responded that no additional inspections have been done since the EPRI Report was released and the conclusion of that document was that minimal numbers of salt crystals were present. He reported the industry is continuing to develop additional inspection techniques including the use of robotics and other instruments to do more detailed inspections which will be part of the overall aging management program for the ISFSI. He reported there are thermal-lucent devices which allow DCP to validate that the ISFSI remains in compliance with its license from the NRC concerning dose at the perimeter of the facility. He reported the Operations Department conducts daily inspections to insure that none of the air vents on the over packs have become blocked and once every three months each of the Hi-Storm over packs receives a detailed radiation emission assessment.

Dr. Peterson stated there is a large difference in the design of the storage and transportation canisters used in Europe, Japan and in the U.S. and this is due to the fact that Europe and Japan reprocess spent fuel and therefore the storage time for the fuel is short and those canisters are designed to be readily opened and closed. He stated he has visited the La Hague Reprocessing Plant in France and observed the hot cell fuel assemblies being removed for reprocessing. The U.S. policy is to perform direct disposal of spent fuel so the focus of the U.S. design was on this capability instead of the ability to reprocess. The major purpose of a welded shut, sealed, design was to minimize the amount of fuel handling that would occur prior to its being placed in a direct geologic depository. He commented that the design for the Yucca Mountain facility included the capability of opening canisters and to be able to repackage spent fuel but it was anticipated that most of the fuel received at Yucca Mountain would have gone directly into geologic disposal and he stated these factors explain much of the difference between the MPCs which are designed to serve as interim storage and transportation and those designed for ultimate disposal. Dr. Peterson stated he was unsure whether any study by the DCISC of changing MPC design in a realistic period of time would be practical because the multiple functions needed for direct disposal would mean that the European designs could not be directly used as a comparison for this purpose and the time required to execute a 10 CFR Part 72 license for differing disposal systems and to find seismically-qualified locations on the site could represent a very long term endeavor and a simpler alternative would be to move the fuel to a CIS location should one be licensed with the associated capability of opening and inspecting and repackaging if necessary.

Ms. Gilmore stated the MPCs hold 32-37 assemblies and permanent repositories were designed for smaller MPCs using different materials, such as Alloy 22, and the MPCs used in the U.S. were not designed for immediate disposal in permanent repositories. Dr. Peterson stated the Alloy 22 canisters were designed for permanent placement at the Yucca Mountain facility and the idea for their design was to avoid having to reopen the canisters. Ms. Gilmore stated she had documentation that the canisters designed to hold 8 assemblies were purchased due to price savings and she stated she was informed by someone at the NRC that the licensing period for a Part 72 license would now be approximately 18 months. She stated that Germany no longer reprocesses fuel and there is no idea as to how well the MPCs are performing as there is no way to inspect them inside or out.

Dr. Lam stated he wished to disclose that twenty years ago he served as a federal Administrative Judge and sat on the Atomic Safety and Licensing Board panel that approved the license for the ISFSI for DCPD and that Mr. Strickland served as the licensing manager for PG&E in that matter. Dr. Lam stated at that time the issue of chloride induced stress corrosion cracking was not known to either PG&E or the Licensing Board or to the Holtec firm. Dr. Budnitz stated from 2002 to 2004 he served as the technical advisor to the Director of the Yucca Mountain Project in connection with the preparation of the license application for that facility and in that capacity he had an important role in guiding and reviewing the design of the Yucca Mountain facility that, if built, would have served as the point of receipt for all the spent fuel to

be received at Yucca Mountain and he confirmed that the design of the receiving facility included the ability to open an MPC.

Dr. Lam thanked Mr. Strickland for a very informative presentation and asked Mr. Harbor to introduce the next PG&E speaker.

Mr. Harbor introduced Supervisor, Compliance and Regulatory Services, Mr. Jim Morris and stated Mr. Morris holds a Bachelor's Degree in Nuclear Engineering and has more than twenty years' experience in nuclear regulatory compliance. Mr. Morris thanked the Committee for the opportunity to make his presentation and commented he has more than thirty years' experience in nuclear in total including as an engineer and a shift technical advisor and was part of the startup of both units of the South Texas Project.

Update on the Status of NRC Performance Indicators, Licensee Event Reports, NRC Notices of Violation, and Issues Raised by NRC Resident Inspectors.

Mr. Morris stated DCPD is rigorously inspected by the NRC and is committed to safety and to protecting the public health and safety. He stated in his presentation he would be covering the last three months, that is, the period July - September 2017 which involved ~1,600 hours of inspection time by the two on site resident NRC inspectors and by NRC regional inspection teams which periodically visit the site. DCPD continues to achieve "Green" performance for all NRC Performance Indicators. He reported four very low safety-significant non cited violations (NCVs) were received from the NRC since the last DCISC meeting in June 2017. No new licensee event reports (LER) were issued from June through September 2017.

Mr. Morris displayed a slide with a chart which summarized the NRC Performance Indicators that all nuclear stations report to every quarter. The NRC audits and assesses the accuracy of these reports. The NRC Performance Indicators, which are also available to members of the public on the NRC's website, include:

- Unplanned Scrams per 7000 Critical Hrs
- Unplanned Power Changes per 7000 Critical Hrs
- Unplanned Scrams with Complications
- Safety System Functional Failures
- Mitigating Systems Performance Index, Emergency AC Power System
- Mitigating Systems Performance Index, High Pressure Injection System
- Mitigating Systems Performance Index, Heat Removal System
- Mitigating Systems Performance Index, Residual Heat Removal System
- Mitigating Systems Performance Index, Cooling Water Systems
- Reactor Coolant System Activity
- Reactor Coolant System Leakage
- Drill/Exercise Performance
- ERO Drill Participation
- Alert & Notification System

- Occupational Exposure Control Effectiveness
- Radiological Effluent Occurrence

Mr. Morris provided a summary of the key definitions used in the NRC inspection significance determination process (SDP) and reported licensee safety significance is characterized as either Green (very low), White (low to moderate), Yellow (substantial), or Red (high) safety significance.

Mr. Morris reported on the four NCVs received since last DCISC public meeting. All four NCVs were determined to be “Green” with very low safety significance with no impact to public health & safety.

- NCV (Green) – NRC-identified failure to properly expand weld inspection scope during the last refueling outage. (NRC Cross-Cutting (C-C) Aspect H.3, Change Management.)
- NCV (Green) – A self-revealing failure to follow equipment clearance procedures resulting in momentary loss of component cooling water to one of two heat exchangers in service at that time. The unit was shut down at the time and both heat exchangers were running with only one required when the loss of component cooling water occurred. (C-C Aspect H.14, Conservative Bias.)
- NCV (Severity Level (SL) IV violation, i.e., related to a Green SDP finding (SL IV)) – Failure to conduct required biennial medical examinations within a two-year period for operators who were not standing active watches due to medical leave or their assignment to other duties. (No C-C Aspect.) In response to Dr. Budnitz’ inquiry Mr. Morris stated that inquiry found the program for reviewing biennial medical examinations to be strong with respect to operators currently assigned to shift work but administrative procedural controls were deficient in following up on those individuals who were on leave or were assigned to other departments. Mr. Morris and Mr. Harbor reported these medical examinations assess the operator’s physical condition and Dr. Budnitz observed and Mr. Morris concurred that they sometimes result in a “no solo” designation meaning the operator is not permitted to undertake certain tasks in the plant without being accompanied and in the event of such a designation there are criteria established for the operator but with improvement and recovery of a level of physical fitness the “no solo” designation may be lifted.
- NCV (SL IV) – Failure to notify the NRC of a permanent medical condition within 30 days. (No C-C Aspect.)

Mr. Morris summarized DCPD performance as “Green” based on NRC Performance Indicators. The following Inspection Reports were issued since the last DCISC public meeting:

- 2nd Quarter Integrated Inspection Report (2017-002, 08/10/17)

- NRC Supplemental Inspection Report and Assessment Follow-Up Letter (2017-008, 09/27/17)

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis inquired as to the duration of the period during which component cooling water was not available to one of the heat exchanger then in service. Mr. Morris replied that the duration for loss of cooling water was less than ten minutes and Dr. Budnitz commented that as the loss of component cooling water occurred while the unit was out of service during a refueling outage the risk was much less than had the unit been operating. Mr. Harbor observed that this difference lies in the fact that were the unit in an operational mode there is only a limited period of time wherein the heat exchanger could be out of service and a much more in depth review would have been required. Dr. Peterson remarked that the opportunity to identify errors at a low level and use those opportunities to take corrective actions by a systematic process is important as that effort can reduce the frequency of mistakes that can have a significantly higher risk significance.

In response to Dr. Lam's inquiry, Mr. Morris and Mr. Garcia reported concerning the NRC 95001 inspection for a previous "White" finding, there are other groups besides Compliance and Regulatory Services involved with the review for the 95001 inspection and a root cause evaluation is being completed which will be presented to the Corrective Action Review Board for approval and then the NRC will be notified and will conduct a focused inspection and provide its evaluation of DCCP's actions.

Prior to adjournment, the Members and Assistant Legal Counsel discussed the need for additional comments by Ms. Gilmore to be presented during the time set aside for public comment on matters not on the agenda at the commencement of the afternoon session.

XXIV ADJOURN MORNING MEETING

The Chair adjourned the morning meeting of the Committee at 11:05 A.M.

XXV RECONVENE FOR AFTERNOON MEETING

The October 19, 2017, afternoon session of the Diablo Canyon Independent Safety Committee was called to order by its Chair, Dr. Peter Lam at 1:00 P.M. Dr. Lam welcomed those persons present in the audience and those watching the proceedings on live streaming video. Dr. Lam requested any of the members who wished to make remarks to do so at this time.

XXVI COMMITTEE MEMBER COMMENTS

There were no comments by Members at this time.

XXVII PUBLIC COMMENTS AND COMMUNICATION

The Chair reviewed the invitation to address the Committee on matters not on the agenda for this public meeting and invited any comments from members of the public who wished to address the Committee to do so now.

Ms. Donna Gilmore of the group San Onofre Safety was recognized. Ms. Gilmore stated she has learned from a SONGS employee that the Areva firm has submitted an amendment request which if granted would permit a plant undergoing decommissioning to eliminate its spent fuel pool which she stated at the present time is not allowed. She remarked the request would also seek to change how peak MPC radiation levels are measured by measuring from the door and from the inlet vent and not from the outlet vent. She remarked the Holtec firm may also seek similar relief. Ms. Gilmore commented the Holtec system used at SONGS has a 10-year warranty on the concrete components and a 25-year warranty on the MPC but if the concrete fails then that voids the warranty on the MPC. Dr. Budnitz commented he believes that a similar warranty was provided for DCPD and these warranties are similar throughout the industry. Ms. Gilmore stated with reference to an accelerated loading period for Holtec MPCs, Holtec did not provide evidence to demonstrate the MPCs could support the higher heat load but Holtec did receive permission to load one canister. Ms. Gilmore remarked the NRC license for the MPCs is for their use for storage not for transport and a license for transport would be addressed at the time the MPCs are to be moved off site. She reported the Areva transport casks weigh approximately 125 tons while the Holtec transport casks weigh 204 metric tons each. Ms. Gilmore observed the only inspection that can be made was done by EPRI and involves using a tool to take measurements and obtain samples through an air vent. She stated she wanted to particularly stress that the California Coastal Commission is requiring transportability in issuing a permit and she remarked that a cracked cask cannot be transported and she encouraged the DCISC to take this fact into consideration in the relicensing process [for the ISFSI]. Ms. Gilmore commented the use of A316L stainless steel is more expensive, as is the use of 5/8 inch thick stainless steel. Ms. Gilmore reported DCPD has 13 damaged fuel cans which she stated is in accordance with a report submitted by PG&E to the DOE. She remarked that the MPCs are not designed to be reusable and there is a question as to how well the aluminum baskets will hold up and no information is available on that issue at the present time. She reported the NRC is still analyzing and studying the effect of vibrations from transport by rail might have on high burn-up fuel as vibrations can cause the cladding on high burn-up fuel to fail and there are still significant issues to be addressed with transportation infrastructure and as to the effect of storage in New Mexico on the Ogallala aquifer from which eight states draw their water supplies. Ms. Gilmore stated she did not agree that a dry storage system for spent nuclear fuel, using what she described as thin-walled canisters, was safer than storage of the fuel in a spent fuel pool as there is no redundancy in the thin-walled canister system.

Ms. Linda Seeley of Mothers for Peace was recognized. Ms. Seeley inquired as to the statement earlier during the meeting by Mr. Strickland that there were no damaged fuel rods being stored at DCPD in light of Ms. Gilmore's statement that there were 13 damaged fuel cans at DCPD and she observed these statements appear contradictory. Dr. Peterson responded and

stated that at HBPP there are broken fuel rods while at DCPD some fuel rods have had leaks, that is, pinhole sized holes. Ms. Harbor confirmed Dr. Peterson's statement and he commented that damage is a relative term and Mr. Strickland's comments earlier referred to damage to the extent where the storage would need to be within a certain type of container as opposed to the relative difference when the damage consists of only a "fuel leaker." Ms. Seeley remarked from her sewing experience that a hole never gets smaller, only larger, and she assumes the same applies to a hold in a nuclear fuel rod. Ms. Gilmore stated her comment was made in reference to the NRC definition of damaged fuel and in accordance with a report by PG&E to the DOE in 2013. **Dr. Peterson directed that an action be taken at the next fact-finding to learn precisely what the state is in terms of the number of leaking fuel elements and how they are currently stored and where they are going to eventually be placed.**

Ms. Jane Swanson of Mothers for Peace was recognized. Ms. Swanson made a request of the Committee to ask PG&E for an in-depth report at a future public meeting concerning what techniques and options are available to PG&E to deal with any MPCs or casks that might develop leaks.

Ms. Sherry Lewis of Mothers for Peace was recognized. Ms. Lewis inquired concerning what was meant by the term "failed fuel." Dr. Budnitz stated there is a specific definition which can be provided but the issue concerns radioactivity leaking from a fuel cladding into the reactor coolant. A leak above a certain threshold constitutes "failed fuel." Dr. Budnitz reported that Unit 1 has operated for approximately 20 years without experiencing failed fuel while Unit 2 last experienced failed fuel about six years ago. Dr. Budnitz described this as better performance than the industry average. **Dr. Peterson identified an item for further inquiry by the Committee into the new inspection methods being developed by PG&E, EPRI, and Holtec to conduct in-service inspections to address and mitigate any degradation that might be discovered and to review the approaches being considered to understand the implications of having cracks or leaks associated with fuel storage.** Dr. Budnitz remarked that many years ago every power reactor experienced a few failed fuel pins every cycle and a very successful, major, engineering effort was undertaken by the nuclear industry to develop advanced fuel manufacturing, materials, and handling techniques which have resulted in a dramatic drop in the numbers of fuel failures. He observed fuel failure produces radioactivity in the coolant and makes it more difficult and sometimes impossible to do certain maintenance tasks because of access issues due to radioactivity and failed fuel makes the plant more vulnerable during an emerging incident with transients and stresses due to off-normal conditions. **In response to Ms. Lewis' follow up inquiry, Dr. Budnitz reported there is a definition established for the term "failed fuel" and the DCISC would look into that issue and provide that definition.**

Ms. Gilmore stated the high burn-up fuel was not in use when DCPD experienced its last fuel failure and it has now been discovered that high burn-up fuel can degrade after it is placed in dry storage. Ms. Gilmore stated that when the NRC approved the use of high burn-up fuel it did not consider or evaluate how the fuel would perform in storage and efforts are now underway to make the review process more holistic. Ms. Gilmore stated the Areva and Holtec systems provide for assemblies, made of zirconium alloy, with the damaged fuel to be placed into steel

damaged fuel cans which have open ends sealed with a type of mesh and therefore the defense-in-depth provided by intact cladding is not replaced by use of the damaged fuel cans and she reported that in other countries sealed damaged fuel cans are used.

XXVIII INFORMATION ITEMS BEFORE THE COMMITTEE (Cont'd.)

Dr. Lam requested Mr. Harbor to introduce the next presentation.

Mr. Harbor introduced Mr. Mark Sharp, Design Engineering Manager at DCP, and reported Mr. Sharp holds a Professional Engineer's Certificate and a Bachelor of Science Degree in Mechanical Engineering and has more than twenty years' experience in the nuclear industry with leadership roles in the Projects and Engineering organizations.

Overview of Regulations and PG&E Programs for Classification of Structures, Systems and Components.

Mr. Sharp stated one of his responsibilities includes configuration management to ensure alignment between regulatory requirements, the physical plant condition, and the analysis and documentation that support the two. To assist with that alignment a classification system has been developed. He reported his presentation would include an overview of regulations and PG&E programs for classification of systems, structures and components (SSCs).

Mr. Sharp stated DCP's design and construction and initial operation spanned more than twenty years. PG&E announced plans to construct DCP in 1963. Construction began in 1968 and was mostly complete by 1973. Commercial operations commenced in 1985. During these years, federal regulations and industry standards were developing and changing and this fact has made the licensing of DCP challenging and complicated. Once the operating licenses were granted, the regulatory framework was established and Units 1 and 2 were licensed, as are the majority of U.S. nuclear power plants, in accordance with the 1967 (draft) General Design Criteria (GDC) defined in NRC regulation 10 CFR Part 50, Appendix A.

Mr. Sharp reported GDC 1, 1967, Quality Standards, established the criteria for classifying systems, structures and components. GDC 2, 1967, Performance Standards, established performance criteria for systems, structures and components that prevent accidents or mitigate their consequences. SSCs are required to be designed to withstand natural phenomena such as earthquakes, fires, floods, tsunamis, etc. In some cases, the NRC adopted industry codes as regulatory requirements. NRC regulation 10 CFR Part 50.55a, Codes and Standards, established additional standards for some primary system mechanical components because of their importance to nuclear safety including requirements for design, construction, and testing of the reactor coolant pressure boundary in accordance with the ASME Code. NRC regulation 10 CFR Part 50 Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, established quality assurance and documentation standards for DCP's structures, systems and components which are documented in the plant's Final Safety Analysis Report (FSAR).

Mr. Sharp observed NRC regulatory guidance was not completely developed before DCPD construction was completed. Common industry classification guidance, established after DCPD design and construction, includes:

- American National Standards Institute (ANSI) N18.2 Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants, Draft August 1970.
- Safety Guide 26, Quality Group Classifications and Standards for Water, Steam, and Radioactive Waste Containing Components of Nuclear Power Plants, March 1972.
- Safety Guide 29, Seismic Design Classification, June 1972.

In response to Dr. Budnitz observation Mr. Sharp confirmed that later versions of these guidance documents have been issued and he stated that while the plant was under construction the NRC published the 1971 GDC and when PG&E submitted its application for operation based on the 1967 GDC and Safety Guides 26 and 29 there were gaps and accordingly DCPD committed to additional quality and performance standards in its FSAR and he stated DCPD generally meets the intent of both safety guides and ANSI N18.2 although its license basis predates all of those documents.

Mr. Sharp reported that in order to meet licensing requirements, DCPD utilizes two primary classification categories that are similar to ANSI N18.1, SG26 and SG29. These are:

- PG&E Design Class
- PG&E Quality Assurance Class

Sub classification categories are also established for Fluid-Mechanical, Electrical, and Instrument and Controls SSCs which he described as follows:

- PG&E Quality/Code Class for Fluid Systems and Fluid System Components (I, II and III)
- IEEE-308-1971 (Class 1E and Non-Class 1E) for electrical systems
- PG&E Instrument Class (IA, IB, IC, ID, and II)

In response to Dr. Peterson's inquiry Mr. Sharp confirmed that safety classifications for civil structures are provided under mechanical systems-structural which also have seismic and quality assurance classifications that define their criteria. Mr. Sharp confirmed Dr. Peterson's observation that every structure inside the power block has a performance and quality criteria associated with the structure and this complicates making any changes, even seemingly minor alterations, to or within these structures. Mr. Sharp confirmed Dr. Budnitz observation that there is a plethora of other codes to which plant SSCs are held to including those of the American Concrete Institute for the Containment structures and some of the codes have provisions to reconcile provisions of older codes to the new code but some do not and are under the purview of the NRC.

Mr. Sharp provided a description of PG&E design class definitions and examples as follows:

- PG&E Design Class I is applicable to SSCs that are important to safety, including SSCs required to assure the following:
 - The integrity of the reactor core pressure boundary.
 - The capability to shut down the reactor and maintain it in a safe shutdown condition.
 - The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of 10 CFR Part 100.

He stated all plant features designated as PG&E Design Class I are designed to remain functional when subjected to the additional forces associated with the design basis earthquake that they are required to withstand: the Design Earthquake (DE), the Double Design Earthquake (DDE) and/or the Hosgri Earthquake (HE). PG&E Design Class I example SSCs include:

- The reactor coolant pressure boundary, the reactor core, and reactor vessel internals.
- Systems or portions of systems that are required for emergency core cooling, post-accident containment heat removal, or post-accident containment atmosphere cleanup.
- Systems or portions of systems that are required for reactor shutdown and residual heat removal.
- Portions of the main steam, feedwater, and steam generator blow down systems extending from the secondary side of the steam generators up to and including the outermost Containment isolation valves.
- Auxiliary Saltwater, Component Cooling Water, and Auxiliary Feedwater Systems or portions of these systems that are required for emergency core cooling, post-accident containment heat removal, post-accident Containment atmosphere cleanup, and residual heat removal.
- Systems or portions of systems that are required for (a) post-accident monitoring (PAM) of Regulatory Guide 1.97, Revision 3, Category 1 variables and (b) actuation of systems important to safety.
- The Control Room, including its associated vital equipment and life support systems, and any structures or equipment inside or outside of the Control Room whose failure could result in an incapacitating injury to the operators.
- Reactor Containment structure, including penetrations.

- Portions of the onsite electric power system, including the onsite electric power sources that provide the emergency electric power needed for functioning of SSCs included in the items above.

Mr. Sharp provided examples of SSCs subject to PG&E Design Class II which include SSC not essential to safe shutdown or mitigation of accident consequences:

- Those fluid systems and components that contain or may contain radioactive material, but whose failure would not result in calculated potential exposures in excess of 0.5 rem whole body (or its equivalent to parts of the body) at the site boundary.
- Power and auxiliary service piping systems (as defined in ANSI standard B31.1, - Paragraph 100.1).

Mr. Sharp stated Design Class II examples include reactor fueling equipment such as fuel handling cranes and portions of the Turbine Building. He remarked that some Design Class II SSCs are seismically qualified to prevent their interaction with seismically qualified SSCs.

Mr. Sharp reported PG&E Design Class III is applicable to SSCs that are not related to reactor operation or safety. Examples include the maintenance shop buildings outside the power block, and domestic water and sanitary lines that do not interact with Design Class I equipment. Seismic qualification of certain PG&E Design Class III SSCs is required to equipment that have the potential to interact with Design Class I equipment.

Mr. Sharp stated the second highest level method used to categorize or classify components is called the PG&E Quality Assurance Class which is defined in the Updated FSAR (UFSAR) and implemented by the Quality Assurance (QA) organization. He reported these are grade quality requirements established in the DCPD Licensing Basis and are implemented by site-specific administrative procedures to include:

- | | |
|---------|---|
| Q | For equipment and structures to which the QA provisions of Appendix B to 10 CFR Part 50 apply for design, procurement, and construction. |
| “Blank” | For PG&E Design Class II or III equipment that is not subject to nuclear QA requirements. |
| R | For those radioactive waste management items that require application of graded QA requirements. |
| G | For those portions of the Fire Protection System and emergency lighting and communication equipment that require application of a quality program as described in NFPA-805. |

- S For equipment within the scope of the seismic configuration control program as defined in Inter-Department Administrative Procedure (IDAP) CF3.ID11. This PG&E Design Class II or III equipment requires seismic qualification to satisfy licensing or UFSAR commitments, or to assure the functionality of PG&E Design Class I components.
- T For Regulatory Guide 1.97, Revision 3, Category 2 and 3 instrumentation that requires application of the graded QA Program as defined in IDAP CF3.ID12.

Mr. Sharp stated GDC 2 establishes performance criteria and DCCP's licensing basis and compels the plant to qualify seismically above and beyond what GDC 2 would otherwise require. DCCP has created a system to track the seismic design classification which Mr. Sharp displayed and discussed using a table showing the relationship of design and quality group classifications.

Dr. Budnitz summarized the information provided by Mr. Sharp by stating that everything in the power plant has a classification and, depending upon that classification, there are special procedures, treatments and inspection required. Mr. Sharp agreed and stated that in some instances codes and guidance are sometimes amplified by additional regulatory performance and Dr. Budnitz observed the industry codes describe the interaction of one system with another. Mr. Sharp agreed with Dr. Budnitz' observation and noted that not all codes adopted by the industry are mandated by the NRC.

In response to Dr. Budnitz' inquiry Mr. Sharp confirmed that DCCP has not invoked the provisions of 10 CFR 50.69 which would allow a request to the NRC to change the code classification of a system, structure or component based upon a risk-informed classification of its role in the plant. Dr. Budnitz observed that when nuclear power plants of DCCP's vintage were designed some components governed by the codes referenced in Mr. Sharp's presentation really need not have been given the safety importance they were originally assigned and utilities now have an option under 10 CFR 50.69 to demonstrate that a different classification of a SSC is warranted. Mr. Sharp agreed and noted that this could reduce the maintenance or testing burden. Dr. Budnitz remarked that not many plants have invoked 10 CFR 50.69 as to do so requires a great deal of work and expense. Dr. Budnitz used an analogy involving a requirement to replace an automobile's windshield wipers every six months when the new wipers would function more than adequately for at least three years as an example of the type of calculus to be engaged in for invoking relief under 10 CFR 50.69.

Dr. Lam observed and Mr. Sharp agreed that federal regulations and oversight of nuclear power plants is both broad and deep and contributes significantly to safety of plant operations but represent a huge regulatory burden on the NRC's licensees. Mr. Sharp commented the Nuclear Energy Institute (NEI) is seeking risk-informed relaxation of code requirements to reduce the burden on licensees and allow the licensees to comply with license requirements while focusing their resources on matters that are truly safety significant. He agreed with Dr. Lam's observation that safety comes with tremendous cost and this makes nuclear technology very expensive.

Ms. Linda Seeley of Mothers for Peace was recognized. Ms. Seeley commented that with the Joint Proposal plan to retire DCP and terminate generation operations, maintenance and repair activities may be circumvented and she inquired as to how it can be ensured that this does not occur. She stated the mission of the DCISC should be to verify that this does not take place. She used as an example the inspection of the Unit 1 reactor vessel, which she stated has been identified as the fifth most embrittled reactor vessel in the U.S., which has had inspection requirements relaxed related to inspections last conducted in 2014 such that the Unit 1 vessel will not be completely inspected before the plant might close in 2024. Ms. Seeley stated her opinion that PG&E may well have known in 2014 that it would not seek renewal of the operating licenses from the NRC for DCP and the relief from this inspection requirement poses a serious threat to the safety of the local community. She also inquired whether replacement of the stator might represent the same type of issue. Mr. Harbor responded that the replacement of the Unit 2 stator is planned and is moving forward and the project has not been cancelled and materials have been acquired and funding has been reserved for the replacement project.

Ms. Donna Gilmore of the group San Onofre Safety was recognized. Ms. Gilmore replied that when a seismic rating is issued there is an assumption that the materials involved are in perfect condition but this is false because some defects always exist. Dr. Budnitz replied that this was not a true statement as the assumption made in context of a seismic rating is the materials have typical material characteristics, and not that the materials are in perfect condition. Ms. Gilmore stated that it was her understanding the NRC does not have an answer for how to inspect certain critical areas for reactor safety which cannot at present be inspected and therefore it is not possible to know whether the material remains in the same condition as it was when it was initially rated and she remarked this issue is also applicable to the MPCs. Ms. Gilmore observed that there are many factors which can cause concrete to fail when used in connection with dry storage and this represents yet another issue.

Ms. Judy Jones of San Clemente, California was recognized. Ms. Jones stated her husband was employed as an ASME vessel engineer and he had often remarked that the ASME code was written to save lives not buildings. Dr. Budnitz stated the ASME codes referenced during Mr. Sharp's presentation concerned the construction and inspection of metal in the pressure vessel and its piping and these were different from the codes referred to by Mr. Jones. Ms. Jones commented that there are factors such as salt air and soil conditions to be considered and it was her assumption that these factors were included in the classification systems described by Mr. Sharp. Dr. Budnitz confirmed that this was the case.

Mr. Harbor introduced Mr. Bob Oldenkamp, Manager of Nuclear Projects at DCP, and reported Mr. Oldenkamp has more than 30 years' experience in the nuclear industry and he holds a leadership role in Maintenance Projects. Mr. Oldenkamp made the final informational presentation for this public meeting.

Summary of Completing the Transition to NFPA-805 and a Summary of the Advantages, Disadvantages, Lessons Learned, and Safety Insights Gained from the Transition.

Mr. Oldenkamp stated he has a total of 42 years' experience at DCP, commencing when the plant was under construction. He described the NFPA-805 Project as a long journey to establish a performance based regulatory scheme allowing the existing Fire Protection Program to be modified in scope and depth of coverage to focus on critical aspects. The transition activity itself is complicated and extensive and includes:

- Engineering Evaluations
- Fire PRA (Probabilistic Risk Assessment)
- Calculations modeling fire growth and spread

Mr. Oldenkamp commented that thousands of documents have required changes in this process and more than 5,000 pages of analysis has been performed in conjunction with the transition to NFPA-805 regulations.

Mr. Oldenkamp discussed and described the NFPA-805 Project milestones as including:

- License Amendment Request (LAR) Preparation and Submittal Phase (completed)
 - Includes identifying modifications to meet RG 1.174 acceptance criteria
 - Submitted to Nuclear Regulatory Commission (NRC) on June 26, 2013
- Post-LAR / Modification Implementation Phase (In progress)
 - Began July 2013, after LAR submittal
 - NRC performed a DCP LAR Audit July 14-18, 2014
 - DCP implementation to be completed within 365 days, by April 15, 2017, after receipt of a Safety Evaluation (SE) and License Amendment (LA)
 - Develop a Document Only Design Change Package (DCP) for delivery of the new NFPA-805 program to the Plant Self-Approval When DCP fully completes the Transition to NFPA-805.
 - Unit 1 target date November 16, 2017
 - Unit 2 target date June 17, 2018

Mr. Oldenkamp reported DCP is now on schedule for overall for post-license change work and for modification work with four modification made on each unit. He remarked most U.S. nuclear power plants opting to transition to NFPA-805 have been required to make many more modifications than has DCP. He reported the target date for self-approval is by November 16, 2017, for Unit 1 and by June of 2018, for Unit 2. Modifications have been made to the hot shutdown panel for both units. The Incipient Fire Detection System is installed and complete for Unit 1 and will be installed as the last modification required for Unit 2 during 2R20 in March 2018.

Mr. Oldenkamp reviewed with the Committee the advantages of a transition to NFPA-805 regulations as including:

- Plant risk from fire reduced by ~40%.
- Use of risk informed-performance based methodology to determine how best to make corrective and preventative modifications.
- Effective implementation of changes to the plant.
- A state-of-the-art PRA that can be used to further improve safety and make other changes to the plant with risk aversion without the need to submit a license amendment request.

Disadvantages of the transition to NFPA-805 include:

- Learning curve for nuclear industry.
- Changing regulatory positions, e.g. NUREG 2180.

In response to Dr. Budnitz' inquiry, Mr. Oldenkamp and Mr. Harbor reported the NFPA-805 Transition Project cost approximately \$100 million to complete and the project required review and approval by the highest corporate level in PG&E. Mr. Oldenkamp stated an important part of any project is to identify lessons learned he described and discussed those for the NFPA Transition Project as follows:

- First-of-a-kind projects have significant impacts.
- No matter how much time you think you have, it is not enough.
- Be flexible; your plan and schedule will change significantly.
- Two pilot plants does not solidify the path forward.
- Any project driven by new regulations will have significant changes.
- Operations, Maintenance, Engineering and other PG&E organizations must be involved.
- Be prepared for emerging issues.
- Understand the complexity and breadth of a first-of-a-kind project.
- Take advantage of other projects so you don't perform the same work twice.

Mr. Oldenkamp reported the NFPA-805 Transition Project benefitted from an excellent team effort including participation by the Engineering, Operations, and Maintenance organizations during the initial design creation. Work order planning provided the team with operating experience during the planning and scheduling process. He reported turnover of the commissioned system worked well due to inclusion of recipients from the beginning of the design process. Having broad team expertise during field installation greatly contributed to the final site acceptance of the Incipient Fire Detection System.

Mr. Oldenkamp reviewed with the Committee the safety insights gained during the Project as including the need to discuss relevant safety issues with personnel on a daily basis before work is performed to support completion of an injury-free project; spending project

oversight time in the field to ensure equipment and components are not harmed; and to have a risk management plan that identifies the necessary oversight during the development, installation, and implementation of the Project. Nuclear safety insights included the careful identification and risk analysis by key personnel to demonstrate significant lowering of core damage frequency (CDF) probability. In response to Dr. Peterson's request, Mr. Oldenkamp described modification to the hot shutdown panel, including additional valve control and indications, as a modification done in the interest of safety to address a situation such as a fire in the Control Room. Mr. Harbor stated he would characterize the modifications to the hot shutdown panel as contributing to making the panel more robust and easier to operate.

In response to Dr. Budnitz' observation that the installation of a modern, robust Incipient Fire Protection System represents a great advance Mr. Oldenkamp described the function of the Incipient Fire Protection System as to sense air inside critical component cabinetry and safety-related systems for ionized particles which are present for a considerable period before a flame starts and thereby providing an early alarm. Stainless steel tubing is used for this system and the process of its installation is complex and expensive. Mr. Oldenkamp confirmed, in response to Dr. Peterson's question, that thermography (infrared photography to detect heat), in conjunction with a software that compares and identifies temperature change, is used extensively in preventive maintenance at DCP. Dr. Budnitz observed while incipient fire detection systems are not at the present time required by code to be installed in new nuclear power facilities in his opinion they are likely to be required in the future. Dr. Budnitz remarked that settling on a methodology for doing a fire PRA was a major advance which enabled plants to confidently identify important accident scenarios which without intervention could lead to core damage.

Ms. Simone Malboeuf was recognized. Ms. Malboeuf stated she has raised her concerns about fire safety several times in the past with the DCISC. She provided a copy what she stated was her most recent correspondence with Mr. David Lochbaum of the Union of Concerned Scientists wherein Mr. Lochbaum stated that 28 U.S. nuclear power plants including DCP remain out of compliance with the NRC's fire safety regulations. Ms. Malboeuf read to the DCISC the content of the email she received from Mr. Lochbaum wherein Mr. Lochbaum explained that due to enforcement discretion granted by the NRC to PG&E from enforcement of fire protection regulations under the 1980 regulations or NFPA-805, and the need for the plant to make modifications to meet the requirements of NFPA-805, this provides the basis for his conclusion that the plant, in its existing configuration, does not meet fire protection regulations as all modifications required to do so are not yet complete. Ms. Malboeuf stated that she has also received information that DCP is out of compliance with NRC regulations due to ground water leaks. She provided a copy of a petition with 366 signatures of local area residents who expressed concern about fire protection regulations. Dr. Budnitz replied that when Ms. Malboeuf previously raised her concerns with the DCISC, the DCISC made inquiry with PG&E and reported on the results of those inquiries at a public meeting and the conclusion at that time was that the statements made by Mr. Lochbaum and the Union of Concerned Scientists were false and that DCP was in full compliance. Dr. Budnitz' observed that despite the fact that Mr. Lochbaum continues to make the same assertion, the DCISC is not aware of anything that would change its previous conclusion concerning DCP's compliance with fire safety regulations. Dr.

Budnitz stated he strongly believes Mr. Lochbaum's assertion was false when the DCISC initially looked into the matter and it remains false today and the plant has been in full compliance with NRC fire protection regulations since 1980. Ms. Malboeuf stated she wished to express her appreciation to PG&E for its efforts to keep the community safe.

Ms. Donna Gilmore of San Onofre Safety was recognized. Ms. Gilmore stated, while everyone is entitled to an opinion they are not entitled to their own facts and in her inquiries she has discovered a great deal of misinformation exists and her goal is always to seek the facts.

Ms. Linda Seeley of Mothers for Peace was recognized. Ms. Seeley inquired whether the reactor vessel identified as embrittled was seismically rated. Dr. Peterson replied that the study of the relationship between seismic events and reactor vessel embrittlement has determined for sequences in which embrittlement is important the operating temperature of the vessel makes the reactor vessel ductile, so that it is flexible and not brittle. It is only when the vessel is allowed to cool that embrittlement occurs and it is the injection of cold water at full pressure which cools the surface of the vessel walls which could cause an embrittled vessel to crack and it was determined that seismic events were quite unlikely to be the initiators for this sequence which is termed pressurized thermal shock. Therefore the incremental frequency of pressurized thermal shock is not changed significantly by seismic events as the earthquake stresses would occur while the vessel was hot and ductile and the seismic event would be followed by normal shutdown and cooling. Dr. Peterson reported that the North Anna Nuclear Power Station in Virginia experienced an earthquake and the Reactor Protection System activated to shut down the reactor and subsequent inspection found the plant to be undamaged. Dr. Budnitz commented that a reactor vessel would remain hot and ductile for many days following an earthquake during operation and metallurgical experiments have determined that earthquake forces are unlikely to cause large pipe breaks due to this ductility.

XXIX CONCLUDING REMARKS & DISCUSSION BY COMMITTEE MEMBERS OF FUTURE DCISC ACTIVITIES

Dr. Lam expressed the Committee's sincere appreciation to the members of the public who attended and participated in this public meeting and also to the senior management of PG&E including Director Cary Harbor and Manager Hector Garcia and their associates. The Chair also expressed appreciation to the technicians of AGP Video who provided audio and visual recording and programming services for this public meeting.

XXX ADJOURNMENT OF EIGHTY-EIGHTH PUBLIC MEETING

There being no further business, the eighty-eighth public meeting of the Diablo Canyon Independent Safety Committee was then adjourned by its Chair, Dr. Peter Lam, at 2:45 P.M.

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

AGENDA TRANSMITTAL FORM

MEETING DATE:	February 7, 2018
AGENDA ITEM:	V-A
AGENDA TITLE:	DCISC Receipt of PG&E's Response to its Twenty-Seventh Annual Report on Safety of Diablo Canyon Operations; July 1, 2016 - June 30, 2017

CONSENT [☐] ACCEPTANCE [☒] INFORMATION [☐]

The Restated Charter for the DCISC approved by the California Public Utilities Commission in Decision 07-01-028 provides:

The Committee shall prepare an annual report and such interim reports as it deems appropriate, which reports shall include any recommendations of the Committee. The report shall be submitted first to PG&E, and PG&E shall respond in writing within 45 days. PG&E's response is then included with the Annual Report.

The Committee made one recommendation in its Twenty-Seventh Annual Report for the period July 1, 2016 – June 30, 2017.

RECOMMENDED COMMITTEE ACTION:

Motion to accept PG&E's Responses to the DCISC's Twenty-Seventh Annual Report.

James M. Welsch
Vice President
Nuclear Generation
and
Chief Nuclear Officer

Diablo Canyon Power
Plant
P.O. Box 56
Avila Beach, CA 94001
805.545.3242
E-Mail: JMW1@pg&e.com

December 15, 2017

PG&E Letter ISC-17-001

Dr. Peter Lam
c/o The Diablo Canyon Independent Safety Committee
857 Cass Street, Suite D
Monterey, CA 93940

Response to the Diablo Canyon Independent Safety Committee Twenty-Seventh
Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations -
July 1, 2016, to June 30, 2017

Dear Dr. Lam:

On November 13, 2017, Pacific Gas and Electric Company (PG&E) received the Diablo Canyon Independent Safety Committee's (DCISC) Twenty-Seventh Annual Report on the Safety of Diablo Canyon Operations for the period of July 1, 2016, to June 30, 2017. The DCISC made One Recommendation during this report period, to perform additional study of submarine landslide-induced tsunami hazards at Diablo Canyon Power Plant (DCPP) and its environs.

Consistent with and as part of the peer reviewed seismic probabilistic risk assessment requirements (that will be submitted to the NRC), PG&E has conservatively assessed a bounding risk assessment of potential seismically induced tsunamis creating waves larger than 14m and 26m. To assess the significance of the generation of a tsunami wave coincident with an earthquake that impacts DCPP, a sensitivity calculation was performed. This sensitivity shows that inclusion of a conditional tsunami has an insignificant impact on the risk to the seismic core damage frequency or seismic large early release frequency.

We are pleased that the DCISC has once again concluded that PG&E operated DCPP safely during the report period. As you are aware, operating the plant conservatively to protect public health and safety is our highest priority, and we will continue to ensure that we fulfill this commitment.

We welcome the DCISC's independent review and oversight, which contributes to the continued safe operation of DCPP.

Dr. Peter Lam
December XX, 2017
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PG&E Letter ISC-17-001

Sincerely,

James M. Welsch
Vice President, Nuclear Generation and Chief Nuclear Officer

cc/: Dr. Robert J. Budnitz
Dr. Peter Lam
Richard McWhorter
Dr. Per F. Peterson
Robert W. Rathie
Ferman Wardell
Robert R. Wellington

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

AGENDA TRANSMITTAL FORM

MEETING DATE:	February 7, 2018
AGENDA ITEM:	V-B
AGENDA TITLE:	Update on Financial Matters, Consultant Compensation and DCISC Activities During 2018

CONSENT [☐] ACTION [☐] INFORMATION [X ☒]

Staff Summary: It is expected that the Committee Members will hold a discussion regarding Committee financial matters and DCISC planned activities during 2018.

The Actual and Proposed DCISC Fact-Finding and Public Meeting Items, with Key Dates, prepared by Committee Consultant Wardell is provided for your use in reviewing and planning Committee activities.

RECOMMENDED COMMITTEE ACTION: As appropriate

DCISC Fact-Finding and Public Meeting Agenda Items for 2017-2018

July 25-26, 2017 Fact-finding Meeting (D.1) (PFP, RFW)

1. Meet with NRC Resident Inspector
2. Fire Doors
3. Annual Radiological Release Report
4. Annual Radiological Environmental Monitoring Report
5. Control Room Ventilation System
6. Direct Current (DC) Power System
7. Plant Health Committee
8. Management Observation Program
9. Nuclear Fuel Performance
10. Independent Spent Fuel Storage Installation
11. DCPD Safety Culture
12. Use of FLEX Equipment to Reduce Plant Risk
13. Cyber Security

August 9-10, 2017 Fact-finding Meeting (D.2) (PL, RFW)

1. Meet with Senior NRC Resident Inspector
2. Containment In-Service Inspection
3. Radioactive Waste Processing Systems
4. DCISC Member Meet with DCPD Officer
5. Steam Generator Health
6. Equipment Qualification Process
7. Engineering Excellence Plan
8. Observe Chemistry Sampling Process
9. Operator Staffing Adequacy
10. Independent Spent Fuel Storage Installation (ISFSI) Loading Campaigns

September 6-7, 2017 Fact-finding Meeting D.3) (RJB, RDM)

1. Plant Health Committee
2. Non-seismic Probabilistic Risk Assessment Programs
3. National Fire Protection Association (NFPA) 805 Program
4. Maintenance Department Performance
5. Foreign Material Exclusion Program
6. Institute for Nuclear Power Operations Evaluation Preparations
7. Local Intense Precipitation Analysis
8. Tsunami Hazard Analysis
9. Meet with NRC Senior Resident Inspector
10. Seismic Probabilistic Risk Assessment Program
11. Auxiliary Saltwater System Health
12. DCISC Member Meet with DCPD Officer

October 18-19, 2017 (B.3) Public Meeting

1. State of the Plant Update
2. Performance During the 20th Refueling Outage
3. Update on the Joint Proposal
4. Update on the Decommissioning Plan

5. Update on Spent Fuel Storage Technical Issues
6. Update on the Status of NRC Performance Indicators
7. Overview of Regulations and PG&E Programs for the Classification of Structures, Systems and Components
8. Status of Completing the Transition to NFPA-805

October 30-31, 2017 D.4) (PL, RFW)

1. Meet with Senior NRC Resident Inspector
2. Joint Proposal, Staff Retention, and Decommissioning Status
3. Plant Performance Indicators: NRC and Industry
4. Dry Cask Storage Loading
5. DCISC Member Lam Meeting with Jon Franke
6. Plant Affordability
7. Employee Concerns Program
8. NRC Information Notice 2017-4, High Energy Arcing Faults in Electrical Equipment Containing Aluminum Components

November 14-15, 2017 Fact-finding Meeting (D.5) (RJB, RFW)

1. Observe Auxiliary Feedwater Pump Control Valve Periodic Test
2. Observe FLEX Training for Licensed Operators
3. Meeting with Three Performance Improvement Coordinators
4. Results of August 2017 INPO (Institute of Nuclear Power Operations) Evaluation
5. Meeting with NRC Senior Resident Inspector
6. Plant Protection System Review with System Engineer
7. Meeting with DCPD Station Director
8. Fire Doors Status
9. NRC 95001 Inspection of Residual Heat Removal System Valve Operator White Finding
10. NRC 2017 Inspection Report for 2010 Event

December 13-14, 2017 Fact-finding Meeting (D.6) (PFP, RDM)

1. Spent Fuel Inspections
2. Meet with NRC Senior Resident Inspector
3. Unit 1 Increased Radiation Levels
4. Emergency Diesel Generator System Health
5. Observe Corrective Action Review Board Meeting
6. Operations Department Performance
7. 230kV/500kV Switchyards and Offsite Power Lines Health
8. Use of Portable Electronic Devices in the Power Block
9. Electronic Work Management System
10. Management of Data in the Performance Improvement Program
11. DCISC Member Meet with DCPD Officer

January 17-18, 2018 Fact-finding Meeting (D.7) (PL, RFW)

1. Observe Operator Rounds in Plant
2. Meet with NRC Senior Resident Inspector
3. Radiation Monitoring system
4. Quality Verification Assessment of Outage 1R20

5. Quality Assurance 2017 Audits and 2018 Audit Plans
6. NRC Evaluation Report of DCPD Tsunamis
7. NRC Regulatory Issues Status
8. Meet with DCPD Officer, Jim Welsch, Site V-p
9. Capital Projects Review Status
10. Equipment Reliability Process Status

February 7-8, 2018 Public Meeting (B.6)

1. State of the Plant
2. Status of Joint Proposal & Employee Retention Plan
3. Update on NRC Matters
4. Results of 2017 Operating Plan and Key Elements of the 2018 Operating Plan
5. Handling & Disposal of Damaged Spent Fuel
6. Overview of FLEX Training
7. Summary of NRC Evaluation of DCPD Tsunami

March 7-8, 2018 Fact-finding Meeting (D.8) (RJB, RDM)

April 18-19, 2018 Fact-finding Meeting (D.9) (PL, RFW)

May 2-3, 2018 Fact-finding Meeting (D.10) (PFP, RDM)

June 13-14, 2018 Public Meeting (B.9)

July 10-11, 2018 Fact-finding Meeting (D.1) (PFP, RFW)

August 21-22, 2018 Fact-finding Meeting (D.2) (PL, RDM)

September 5-6, 2018 Fact-finding Meeting (D.3) (RJB, RFW)

October 24-25, 2018 Public Meeting (B.3)

November 7-8, 2018 Fact-finding Meeting (D.4) (RJB, RDM)

December 12-13, 2018 Fact-finding Meeting (D.5) (PFP, RFW)

January 23-24, 2019 Fact-finding Meeting (D.6) (PL, RDM)

February 13-14, 2019 Public Meeting (B.6)

DCPP 2017-2019 Key Dates

NSOC Meetings (DCISC invited only to the 2 hour exit meeting on the final day)

January 8 – 11, 2018

May 14 - 17

October 15-18

Refueling Outages

2R20 February 11 – March 17, 2018

1R21 February 4 – March 8, 2019

2R21 September 29 – December 8, 2019

Emergency Preparedness

TBD

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE	
AGENDA TRANSMITTAL FORM	
MEETING DATE:	February 7, 2018
AGENDA ITEM:	V-C
AGENDA TITLE:	Consideration of Issues on the Open Items List
CONSENT [] ACTION [X] INFORMATION [X]	
Staff Summary: It is anticipated that the committee will hold discussion concerning the items appearing on its Open Items List prepared by Committee Consultant Wardell.	
RECOMMENDED COMMITTEE ACTION: As appropriate, provide direction.	

Diablo Canyon Independent Safety Committee Open Items List

Open Item Type: M= Monitor F = Follow-up I = Issue Items in Italics are new or revised

ITEM NO.	TYPE	OPEN ITEM CATEGORY/DESCRIPTION	Last Actions	Next Action
CO		Conduct of Operations (CO)		
CO-7	M	Review DCCP storm response experience and strategy every two years [or as necessary] during or after annual winter storm season.	4/15FF 5/17FF	<i>As necessary</i>
CO-8	M	Monitor all reactor trips – automatic and manual (review trip LERs at public meetings). [No trips since 2014.]	7/11FF 1/14FF 8/14FF	Post-trip FFs & PMs
CO-9	F	Reactivity Management – review every 18 months. [Reviewed Reactivity Management 5/16FF – satisfactory.]	8/14FF 5/16FF	2Q18FF
CO-10	M	Mispositioning Errors (Equipment Status) – monitor the status of mispositioning errors and actions to resolve. [Reviewed at 11/15FF – satisfactory.]	6/14FF 11/15FF	Post-2R20
CO-11	M	Operator concerns and issues – review periodically the status of operator concerns and issues. [Reviewed Ops Human Performance & Ops Excellence Plan 8/16FF – satisfactory.] [<i>Reviewed Ops Dept. performance 12/17FF – sat.</i>]	8/16FF <i>12/17FF</i>	<i>12/18FF</i>
CO-13	M	Review any implementations of the CAISO load following policy that result in DCCP transients. Review any initiatives to operate DCCP in different modes, such as load following due to renewable energy fluctuations, during its final years of operation. [<i>Reviewed at Dec. 2017 FF? Close?</i>]	6/16PM 3/16FF <i>12/17FF?</i>	<i>Close?</i>
CO-14	F	The DCISC team found the operator 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. [Reviewed operator staffing adequacy 8/17FF – satisfactory.]	10/16PM 6/17PM 8/17FF	2/18PM
CM		Conduct of Maintenance (CM)		
CM-7	I	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. [Reviewed Unit 1 visual internal weld inspection at 8/17FF – satisfactory]	7/12FF 8/17FF	2R20 4/18FF
CM-10	M	On-line Maintenance: review the implementation of on-line maintenance bi-annually, including the 12-week Rolling Maintenance Schedule about how well it is working & impacting risk. Review trend of amount of on-line maintenance. DCCP Assessment of Maintenance Risk and On-Line Maintenance Risk Procedures have been substantially upgraded with the addition of an Integrated Risk Review Team [Reviewed on-line maintenance risk 4/16FF – satisfactory.]	1/12FF 9/13FF 6/14FF 4/16FF	2Q18FF

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CM-13	M	Review Maintenance Department performance measures, staffing, etc. approximately annually. [Reviewed Trouble-shooting 3/16FF – satisfactory.]	3/16FF 9/17FF	4Q18FF
CM-14	M	Use and Plans for Use of Wireless Technology within the Power Block – DCCP Electronic Device Project is focused on increasing the use of electronic devices, including tablets, in connection with maintenance tasks and for recording data during inspection rounds. This is intended to improve efficiency and reduce paper. A few electronic work packages have been issued. A second project involves use of electronic devices and increased use of wireless information technology (IT) within the Power Block. The Power Block consists of those portions of the plant used to generate electricity including the Turbine Building, the Auxiliary Building and the Control Rooms. One of the problems with use of wireless technology is the potential for radio interference with a plant control system, which must be properly shielded and protected. [Review electronic work packages.] [Reviewed at 9/16FF – satisfactory.] How are the much larger data sets being managed? <i>[Reviewed at Dec. 2017FF – satisfactory? Close?]</i>	9/16FF <i>12/17FF?</i>	<i>Close?</i>
EN		Engineering Program (EN)		
EN-16	F	DCCP 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 the Open Items 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 the Open Items List.]	See list at end of OIL	Regularly
EN-20	F	Each Member should review or observe Plant Health Committee meetings. [Note: next action changed to “Regularly” and noted in table at the end of the OIL.] Ferman or Rick will check to see what other meetings would be of interest to the DCSIC. {Are there other regular meetings the DCSIC should attend?}	See list at end of OIL	Regularly
EN-31	F	The fact-finding team received an overview of the [Engineering Excellence] plan and should follow up in the future with a more detailed review of selected elements of the plan.	6/16PM <i>8/17FF</i>	<i>8/18FF</i>
HP		Human Performance: Human Errors and Improving Safety & Efficiency of Plant Performance		
HP-1	M	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). [Reviewed Ops Human Performance at 8/16FF – satisfactory.]	3/15FF 8/16FF	Post-2R20 <i>9/18FF</i> RJB
HP-18	M	Review biennially operator aging, physical fitness, “no solo” issues, attention enhancement, stress management, & incentives for operator focus. [Reviewed 8/16FF – satisfactory.]	3/14FF 8/16FF	3Q18FF
HP-25	M	Further observations and improvements in the Management Observation Program should be reviewed by DCISC. [Reviewed 7/17FF – satisfactory.]	10/15PM 7/17FF	3Q18FF
HS		Health, Nuclear Safety and Safety Conscious Work Environment		
HS-6	F	Follow DCCP 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). <i>[Reviewed ECP 10/17FF – sat.]</i>	3/17FF 7/17FF <i>10/17FF</i>	3Q18FFF
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.] <i>[Met with 3 PICO's Nov 2017 FF – satisfactory]</i>	See list at end of OIL	At least once per year
EP	Emergency Preparedness (EP)		
EP-2	M Attend and observe DCPD emergency drills and exercises annually [including Hostile Action Based Exercises], paying special attention to JMC 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. Consider public participation in drills.	9/9/15 11/16FF 1/17FF 2/17PM	Next exercise
RA	Risk Assessment and Management (RA)		
RA-5	M 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).	3/15FF 6/15FF 8/16FF 9/17FF	9/18FF RJB
RA-6	F Monitor Seismic Fragility Analysis progress. [Reviewed at 9/17 FF – satisfactory.] <i>[Review after next submittal to NRC.]</i>	8/16FF <i>9/17FF</i>	<i>2Q18FF?</i> <i>RJB</i>
RA-7	F Review Seismic PRA annually. [Reviewed Seismic PRA 8/16FF – satisfactory.] <i>[Review DCPD seismic PRA April 2018 submittal.]</i>	9/17FF	9/18FF 2/18PM
NS	Nuclear Safety Oversight and Review (NS)		
NS-5	M Monitor NSOC meetings periodically to observe their processes and their review of nuclear safety issues. [Reviewed at 11/15FF – satisfactory.] [2018 NSOC schedule not yet available.]	11/15FF 3/17FF	Next meeting
NS-9	M Monitor DCPD's program to track INPO Areas for Improvement. Review with DCPD Coordinator. <i>[Reviewed results of Aug/Sep INPO evaluation – satisfactory.]</i>	9/17FF <i>11/17FF</i>	<i>11/18FF</i>
RP	Radiation Protection (RP)		
RP-3	M Regularly review outage RP performance.	2/16PM <i>10/17PM</i>	<i>Post-2R20</i>
RP-12	M Review annual DCPD radiological release report each year. Review at Summer or Fall FFs. [Reviewed radiation release reports 9/16FF – satisfactory.]	9/16FF 7/17FF	<i>3/4Q18FF</i>
RP-13	F The PHC also reviewed the Radiation Monitoring System, which is white status for Unit-1 (U-1) and in yellow status for Unit-2 (U-2) because of equipment reliability problems due to aging. [Review re: Joint Proposal. <i>See SE-51.] [Reviewed Jan 2018 – satisfactory. Delete here and track reviews in table at end.]</i>	11/14FF 3/16FF	<i>Delete</i>
QP	Quality Programs (QP)		
QP-3	M 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.	3/17FF <i>1/18FF</i>	<i>1Q19FF</i>
QP-9	F Software QA Program - [Reviewed at December 2010 FF – satisfactory.]	12/10FF	<i>2Q18FF</i>
NF	Nuclear Fuel Performance (NF)		
NF-9	M Nuclear Fuel Performance & Issues (review after RFOs). [Reviewed at 11/16FF – satisfactory.] [2/17PM.	6/14FF 7/17FF	Each RFO 4/18FF for 2R20

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ER		Equipment Reliability and Life Cycle Management (ER)		
ER-5	M	Monitor the Equipment Reliability Process approximately annually. The indicators for Deficient Critical Components Backlog and Operational Work-arounds rated as needing improvement and the DCISC should continue its review of this item in the future. [Reviewed critical equipment clock resets 4/16FF – satisfactory.]	7/15FF 4/16FF <i>1/18FF</i>	<i>2Q18FF</i>
OE		Organizational Effectiveness & Development (OE)		
OE-1	F	Review DCPD Operating Plan each January after development. [Reviewed at 1/16FF & on agenda for 2/16PM.]	1/16FF 2/17PM	2/18PM
SE		System and Equipment Performance/Problems (SE)		
SE-26	M	Review reactor pressure vessel compliance status after next set of surveillance samples is analyzed and effective vessel lifetime projections are updated. [Reviewed 3/17FF – satisfactory.]	3/16FF 3/17FF	2Q18FF 2R20
SE-39	F	Review and tour the inspections and repairs of concrete Intake Structures following selected refueling outages. [Reviewed at 7/09 FF, 6/13 FF, and 11/14FF – satisfactory.]	11/14FF <i>9/17FF</i>	After <i>2R20</i>
SE-40	F	Monitor the status of transformers & leakage, failures, corrective actions. Follow status of transformer protection barrier. [Protective wall schedule delayed until R21 outages. DCISC follow-up needed.] [Reviewed 1/17FF – satisfactory.]	4/13FF 12/14FF 2/15PM 1/17FF	1Q18FF
SE-42	F	Safety System Functional Failures – review annually. [Reviewed at 9/15FF – much improvement – continue to monitor.] [Reviewed 3/22/17FF – much improvement.]	3/17FF <i>6/17PM</i>	<i>3Q19FF</i>
SE-45	F	Control Room Ventilation System Issues. This (Control Room Ventilation System licensing basis change) is expected to be completed by the end of 2015. Mr. Wardell suggested the DCISC review this issue when DCPD submits its license amendment (LAR) to the NRC and following NRC approval of the LAR. [Reviewed 5/16FF – satisfactory. NRC approval expected mid-2017.] [NRC gave approval of the LAR for use of Alternate Source Term 3/17. DCISC should follow up in early 2018 on status of issue.]	6/13PM 3/14FF 5/16FF 7/17FF	1Q18FF
SE-47	F	The DCISC concluded the station continues to set high performance goals and is maintaining effective control of secondary water chemistry and is responding proactively to identify issues. Review all Chemistry in future. [Reviewed 9/15FF – excellent performance.] [Reviewed at 4/16FF – satisfactory.]	10/13P 9/15FF 4/16FF	3Q18FF all Chem.
SE-48	F	Voltage stability issues with the 230kV System should be pursued at least annually not only with the plant but also with the appropriate group in the PG&E corporate organization. [Reviewed at 9/15FF – progress made – continue to monitor until complete following 2R19.] [Reviewed at 12/17FF – satisfactory. <i>Close?</i>]	4/16FF 12/16FF <i>12/17FF</i>	<i>Close?</i>
SE-49	F	Emergency Diesel Generators (EDGs) – [Reviewed EDGs at 6/15FF & 9/15FF – satisfactory. Health Yellow but to become White 4Q15, reviewed at 7/16FF – White.] [Reviewed at 1/17FF: U1 Green, U2 White.] [Review EDG Reliability Program at next EDG FF].	7/16FF 1/17FF <i>12/17FF</i>	<i>4Q18FF</i>
SE-51	F	These project [Plant Protection System Upgrade and new generator stator] and others of this nature are subject to review, and the process for that review is now under consideration and development to review major capital projects in light of the currently proposed remaining period of operations under the Joint Proposal. The DCISC team found the project on schedule but the entire process of major capital project review is a topic the DCISC should pursue and review in the future. [Reviewed at the 12/16FF – project is under review by DCPD. Continue to follow.] [<i>Plant Protection System upgrade cancelled generator stator kept per Nov 2017 FF. Close.</i>]	10/16PM 12/16FF <i>10/17FF</i> <i>11/17FF</i>	<i>Close</i>

SE-52	F	Mr. Wardell reported the fuel handling equipment is being brought to a healthy status but the DCISC should continue to monitor these efforts with reference to any issues of obsolescence or problems obtaining replacement equipment	6/17PM	Post-2R20 RFO
SG		Steam Generator Performance (SG)		
SG-6	M	Review Steam Generator performance metrics & inspection results after refueling outages and the 5-year tube inspections. [Tube inspections 11/10PM, SG performance 6/11PM] [Reviewed 5/12 FF & 6/12PM – satisfactory – continue to monitor.] [Reviewed at 8/17FF – SGs in good shape.] <i>Moved to OM-3 – delete here.</i>	11/14FF 8/17FF	<i>Delete</i>
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. <i>Review Steam Generator performance metrics and inspection results.</i> [SGs reviewed at 8/17FF – SGs in good shape.]	11/15FF 5/17FF 8/17FF	2R20 Feb/Mar 2018
OM-4	M	Review Outage Safety Plan, safety margin trends, outage results, including clearances, following each outage at FFs and PMs.	5/16FF	Each RFO 10/17PM
OM-5	F	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.] <i>[Reviewed 9/17FF – satisfactory.]</i>	12/14FF 9/17FF	<i>Post-2R20</i>
SEC		Security (SEC)		
SEC-3	M	Monitor interaction of Security and Operations, Engineering, Maintenance, and Emergency Preparedness for effects on nuclear safety. <i>Plant security per se not reviewed but reviewed only in the context of impact on plant operation.</i>	8/14FF 7/16FF	2Q18FF
<i>SEC-4</i>	<i>M</i>	<i>Cyber Security – review DCPD progress in implementing their cyber security program in compliance with NRC schedule. [Reviewed Cyber Security 7/17FF – satisfactory.] [Moved from Open Item QP-9 & SEC-3.]</i>	<i>12/15FF 7/17FF</i>	<i>1Q18FF</i>
SF		Independent Spent Fuel Storage Installation – ISFSI (SF)		
SF-1		Monitor ISFSI operations, including cask transfer. Review following next campaign.	8/17FF 11/17FF	3Q18FF
SF-2	M	Follow technical advances of relative risks of cask and pool storage. NRC Staff study and Commissioners' vote. Monitor needs for opening casks to inspect fuel. Monitor SONGS & Humboldt Bay spent fuel transfer plans. Include corrosion of metals [Reviewed at 12/16FF – satisfactory.] <i>[Reviewed inspections 12/17FF – satisfactory.]</i>	12/16FF 10/17PM 12/17FF	3Q19FF

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. [Reviewed 3/10 FF – progress satisfactory. Continue to monitor.] DCCP Seismic study reviewed 3/15 FF & to be presented by DCCP at 6/15PM. Shoreline Fault – follow activities and events with the Shoreline Fault. Review NRC's Review Report within several months.	6/15PM 11/15FF 8/16FF	2Q18FF? RJB
SC-4	M	Monitor new DCCP risk-based Tsunami Hazard & Local Intense Precipitation Flooding Analyses. [Coordinate with BDB-1, Fukushima review.] Dr. Robert Sewell presented his evaluation at June 2016 Public Meeting, concluding with a recommendation that a state of the art probabilistic tsunami hazard assessment, akin to a SSHAC Level 2 review, is warranted which would involve consulting multiple disciplines and selecting experts capable of representing the informed technical community. Dr. Peterson remarked that with the Bartlett cruise data some fairly good conclusions may be possible related to the risk associated with submarine landslide as well as the magnitude and size of tsunamis produced by such events. Dr. Budnitz observed that determination of the annual probability of a 29.9-foot tsunami would be important in context of assessing any threat to the plant and until some sort of state of knowledge of the probability is established, that is a probabilistic understanding of the epistemic uncertainty. Awaiting DCCP's actions in response to the Committee's request to have further study done regarding the tsunami hazard and risk. [Reviewed at Dec. 2018 FF. NRC closed issue. Close.]	2/16PM 6/16PM 8/16FF 9/17FF	Close
SC-12	F	Workplace seismic safety – review annually.	2/16PM	2Q18FF PFP
FP		Fire Protection (FP)		
FP-5	M	Review [non-NFPA-805] Fire Protection Program and Systems every two-three years, including QV audits and NRC triennial inspections. Review the health and correction of degraded systems every six months. Monitor fire doors (Plant Door Life Cycle Management Plan) for correction of impairments [Fire doors Reviewed 11/17FF – zero fire door impairments and watches.]	3/17FF 7/17FF 11/17FF	1Q19FF
FP-6	M	Monitor DCCP's process of converting to the National Fire Protection Association's Regulation 805 (NFPA 805) standard. [Reviewed at 5/16FF – NRC approval issued. DCCP has a year to complete procedures, training, etc.] Modifications [for NFPA-805] to the plant were completed in November 2016 and procedures and training will need to be complete by April 2017. The DCCP should next review this issue in late 2018 following implementation of the Unit 2 self-approval process, which is planned for June 2018.	11/16FF 12/16FF 9/17FF 10/17PM	4Q18FF after 2R20 outage review
LD		Learning & Development Programs (LD)		
LD-3	M	Review non-license technical, operations & accredited training programs at least annually. [Reviewed Maintenance Training Programs 12/14FF – satisfactory.]	12/14FF 12/14FF	2Q18FF
LD-6	F	Observe operator license, re-qualification, classes periodically in FF meetings. Include Enhanced Simulator Training.] [Observed Ops TCOA training & Eng. DC Power System] [Reviewed FLEX training 11/17FF – sat.]	6/14FF 9/16FF 12/16FF	2Q18FF
NR		Nuclear Regulatory Commission Items (NR)		
NR-3	M	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. [Note: Next Action changed to "Regularly."]	Most FFs	Regularly
CL		Closed Loop Cooling (CL)		Close?

CL-4	M	Monitor salt deposition on external equipment, systems, EDG, ventilation systems, transformers, etc. [Check with DCPD on data availability beforehand.] [Determine rate of salt deposition.] [Reviewed at 7/16FF.]	4/15FF 7/16FF	<i>Close?</i>
BDB		Beyond Design Basis Events (e.g. Fukushima Event)		
BDB-6	F	DCPD FLEX Status – review status of progress on FLEX, including EASW screen plugging, SFP level instrumentation; SAMG, EDMG, EOP consolidation; portable instrumentation; operator actions; temporary connections; equipment storage. Review BDB & FLEX storage re: PPR & dosimetry. Review FLEX training. [DCISC should observe future FLEX training and FLEX overall. [Reviewed EASW pump test results at 11/16FF. Results satisfactory.] <i>[Reference seismic fragility – RA6 – RA7] [Observed FLEX operator training Nov 2017 FF – satisfactory.]</i>	5/16FF 11/16FF 7/17FF <i>11/17FF</i>	2Q18FF PFP
DEC	F	Decommissioning		
DEC-1	F	Review DCPD decommissioning plans periodically as a result of the Joint Proposal forced 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 DCPD 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 DCPD. [Reviewed at 1/17FF. DCPD is forming decommissioning organization to look into decommissioning options.]	10/16PM 1/17FF <i>10/17PM</i>	<i>1Q18FF</i>
DEC-2	F	In response to Mr. Geesman's observation that if the spent fuel had to be repackaged in the future a dry transfer technology would need to be used, Dr. Peterson responded that issue needs to be reviewed in context of the timing of decommissioning of the spent fuel pools because once the pools are no longer available you lose much of the ability to inspect and repack and need to be prepared to undertake much more ambitious efforts in the event the fuel must be repackaged. Dr. Budnitz observed that the chances that the fuel would need to be repackaged prior to transport offsite are, in his opinion, small but represent an issue the Committee will need to carefully review. <i>[Reviewed 12/17FF – satisfactory. Close.]</i>	2/17PM	<i>Close</i>
<i>DEC-3</i>	<i>F</i>	<i>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.</i>	<i>10/17PM</i>	
<i>DEC-4</i>	<i>F</i>	<i>Dr. Peterson commented that . . . it would be worthwhile to follow up and identify the differing categories of waste that will be produced during decommissioning and their respective safe disposal paths and to ensure that there will not be any stranded waste left at the site.</i>	<i>10/17PM</i>	<i>4Q18FF</i>
O		Other Items (O)		
O-1	F	Perform observations of evolutions (work processes) within the plant periodically. [Performed observation of Turbine Building 11/13FF, 12/16FF and 3/17FF – satisfactory. Chemistry sampling 8/17FF] Continue with these about annually. <i>[Observed operator rounds in EDG room – satisfactory.]</i>	12/16FF 8/17FF <i>1/18FF</i>	<i>2Q18FF</i>
2/16 PM 10		Public Meeting Items (PM) (Reference: Public Meeting Minutes Pages)		
2/16 PM 10	F	Permanent corrective action installing [4kV] solid state relays will be completed during refueling outages 1R21 2R21. The fact-finding team concluded reasonable progress has been made but the DCISC should continue to monitor station progress with regard to the potential open phase conditions, which could affect plant safety systems. [Reviewed at 5/16FF – satisfactory. Continue to monitor.]	2/16PM 5/16FF	Post 1R21 & 2R21 RFOs

6/16 PM 3	F	The PHC also discussed funding for modifications including installation of a cover over a Unit-2 diesel generator trip button to prevent inadvertent operation and the DCISC will follow up on why that action was not taken when Unit-1 had an inadvertent actuation of the same button which was addressed by installation of a similar cover. [Reviewed why action not taken at 12/16FF; Need to confirm when modification completed on Unit 2.]	6/16PM 12/16FF 12/17FF	Done Close
4	F	The DCISC team found a significant reduction in SSFF during 2015 with one SSFF for Unit-1 and four for Unit-2 with none experienced in the fourth quarter of 2015. The DCISC team recommends the Committee continue to routinely monitor progress in mid-2017. [Reviewed 3/17FF – significant improvement.]	6/16PM 3/17FF	2Q18FF
6/17 PM 2	F	Mr. Wardell recommended that the DCISC review the Westinghouse report [on GSI-191] when it is available. [DCPP switching to deterministic analysis, no need for Westinghouse probabilistic report.]	6/17PM 1Q18FF	1Q18FF
3	F	NRC is preparing to conduct a 95001 inspection for this event which will take place later in June 2017 and Mr. Wardell confirmed the DCISC would follow up with the NRC Senior Resident Inspector on this issue. [DCISC has report & will review in 11/17FF.] [Reviewed at 11/17FF. Inspection open items to be re-inspected in late 2017 or early 2018.] [Re-inspection no issues. Close.]	6/17PM 11/17FF	Close
4	F	Unit-1 has experienced a high source term due to cobalt 60 activation in the Reactor Coolant System (RCS) as a result of stellite from rubbing due to misalignment of a shaft on a reactor coolant pump having gotten into the RCS and going through the reactor core which increased the radiation levels for Unit-1. This issue will be reviewed during a future DCISC fact-finding. [Reviewed Dec 2017 FF – satisfactory. Close.]	6/17PM 12/17FF	Close
6	F	Investigation into this matter determined that an administrative evaluation before components used for scaffolding were installed was not done and while a reevaluation determined there was no adverse effect on safety-related systems the issue was entered into the Corrective Action Program and the Quality Verification (QV) organization will perform an assessment. Mr. Wardell recommended that the DCISC follow-up on the QV assessment during a future fact finding. [Reviewed at Jan 2018 FF – satisfactory. Close.]	6/17PM 1/18FF	Close
7	F	Dr. Peterson observed there is potential that an increase in the risk of transmission problems or outages might affect the availability of alternate off site power sources for DCPD due to increasing incentives to curtail power output because of production or grid-related reasons. Mr. Peck and Dr. Peterson agreed this might be a suitable topic for a future DCISC fact-finding which should include representatives from the PG&E transmission organization. [Combine with 500kV item in 12/17FF. Done. Close?]	6/17PM 12/17FF	Close?
8	F	NCV involved an occurrence in 2010 when a certain number of instrumentation devices used for post-accident, wide-range, performance monitoring were found to have been operating outside of the requirements of technical specification 3.3.3. These devices monitor temperature in the Reactor Coolant System's hot and cold legs and a number of devices were determined to have been operating outside their environmental temperature range due to incorrect installation of insulation which trapped heat inside the thermic tension pipe. As a result temperatures exceeded normal allowed temperature. Mr. Wardell stated the DCISC would receive the root cause evaluation for this NCV from PG&E and likely review the NCV at a future fact finding. [Reviewed at Nov 2017 FF – satisfactory. Close.]	6/17PM 11/17FF	Close
9	F	In response to a question from Dr. Peterson Mr. Frauenheim stated he would provide the DCISC with information concerning how many of the 1,038 events reviewed during 2016 were found to have applicability to DCPD. [Reviewed at 12/17FF?]	6/17PM 12/17FF?	Close?

10	F	Dr. Peterson remarked and Mr. Frauenheim agreed that a review of the amount of data and information managed by DCPD would be a worthwhile topic for a future fact-finding. <i>[Reviewed at Dec 2017 FF. Review Eng. Dept. data trending at future FF.]</i>	6/17PM 12/17FF	2Q18FF PFP
11	F	Dr. Budnitz stated he would inquire of the PRA group whether the CAP trend in reducing items adverse to quality and in the reduction of human error has propagated through to the way human error is analyzed in PRAs.	6/17PM	3/18FF RJB
13	F	Dr. Budnitz remarked that during his last fact-finding on human performance the errors reviewed were mostly errors of commission as opposed to errors of omission. He inquired of Mr. Frauenheim whether the plant has attempted to determine the numbers of each in the data set Mr. Frauenheim presented to the DCISC. Dr. Budnitz stated he would follow up on this issue during a future fact-finding. [How about PFP's 12/17FF with Frauenheim?]	6/17PM	3/18FF RJB
Oct. 2017 PM 1	F	Mr. McWhorter suggested that an item be added to the Committee's Open Items List concerning the matter of possibly establishing a post-shutdown role for the DCISC to review issues related to plant decommissioning. [Item added as DEC-3. Close.]	10/17PM	Close
2	F	Mr. Wardell recommended a fact-finding visit be made early in 2018 to confirm the completion of the modifications (modification required to duct work and filters and flow switches) and to then close this issue on the Open Items List.	10/17PM	3/18FF
3	F	Dr. Budnitz stated during 2018 there will be additional training on the use and deployment of FLEX equipment and strategies for employing FLEX and the DCISC will make the effort to observe this training during future fact-finding and will review the effectiveness of the training. [FLEX training for operators observed in 11/17FF. Close.]	10/17PM	Close
4	F	Mr. McWhorter stated there have been valid concerns identified in the Maintenance Department for which actions are being taken and he recommended the DCISC conduct a further review of the Maintenance Department in late 2018. [Included in Item CM-13. Close.]	10/17PM	Close
5	F	Dr. Peterson remarked it would be good for the DCISC to review the basis for the determination of the range of the size of these slides when the DCISC reviews the final submittal. [To be presented in 2/18 PM. Close.]	10/17PM	Close
6	F	The DCISC team concluded that PG&E's work appears to be sound and the DCISC should continue to follow developments (of submittal of the seismic PRA to the NRC in April 2018) with regard to resolution of the findings and observations and the submittal to the NRC. [Included in Item RA-7. Close.]	10/17PM	Close
7	F	Dr. Peterson stated the informational video now being produced for the Committee should provide a vehicle to introduce the Committee to the public and to describe how the Committee functions and performs its safety review function and the time on the ride back to the Energy Education Center from the plant should be employed to afford the public the opportunity for the public to ask questions of the Committee.	10/17PM	2/18PM?
8	F	Dr. Budnitz made an offer which the other Members accepted to take the lead in identifying such persons (to investigate and identify a person with experience in decommissioning a nuclear power plant). Dr. Peterson commented he is interested in understanding the disposition path for all the various materials and components which will result from decommissioning a nuclear power plant.	10/17PM	Provide update in 2/18PM

9	F	Dr. Peterson requested that a reference be added to the topic on Decommissioning on the Open Items List to the effect that the DCISC is at this time principally interested in decommissioning due to the potential impact during the period of generation operations and will seek clarification about whether the DCISC should play a role post-shutdown to review decommissioning issues. [Completed. Close.]	10/17PM	Close
10	F	Dr. Budnitz requested the office of the DCISC Legal Counsel to review and opine concerning the role and options available to the DCISC to review decommissioning activities at DCCP post-shutdown and how to go about making inquiry or a request to implement any decision by the Committee concerning such a role. Assistant Legal Counsel Rathie confirmed that the office of Legal Counsel would follow through concerning Dr. Budnitz' request and the issues raised by the other Members and would report back.	10/17PM	2/18PM
11	F	Dr. Peterson remarked the DCISC is very interested in following FLEX training issues and the particular areas which will be the focus of the NRC FLEX inspection and Mr. Harbor stated the FLEX inspection procedures would be provided to the DCISC for review. [NRC FLEX inspection complete. No issues. Close.]	10/17PM	Close
12	F	Dr. Peterson observed that it might be useful to have a compendium of parts of the [FLEX] training videos for presentation at a public meeting.	10/17PM	2/18PM
13	F	Dr. Peterson commented that . . . it would be worthwhile to follow up and identify the differing categories of waste that will be produced during decommissioning and their respective safe disposal paths and to ensure that there will not be any stranded waste left at the site. [Added as Item DEC-4. Close here.]	10/17PM	Close
14	F	Dr. Peterson directed that an action be taken at the next fact-finding to learn precisely what the state is in terms of the number of leaking fuel elements and how they are currently stored and where they are going to eventually be placed. [Reviewed at 12/17FF? Close?]	10/17PM	Close?
15	F	Dr. Peterson identified an item for further inquiry by the Committee into the new inspection methods being developed by PG&E, EPRI, and Holtec to conduct in-service inspections to address and mitigate any degradation that might be discovered and to review the approaches being considered to understand the implications of having cracks or leaks associated with fuel storage. [Reviewed at 12/17FF. Close?]	10/17PM	Close?
16	F	In response to Ms. Lewis' follow up inquiry, Dr. Budnitz reported there is a definition established for the term "failed fuel" and the DCISC would look into that issue and provide that definition.	10/17PM	Status?

Diablo Canyon Independent Safety Committee Open Items List

DCPP Systems/Components Reviewed Periodically

4 kV – Nov 2015
 230 kV – **Dec 2017**
 500 kV – **Dec 2017**
 Aux Feedwater – **Nov 2017**
 Aux Saltwater – Sep 2017
 Aux Bldg Ventilation – Mar 2017
 Centrifugal Charging Pumps – Mar 2017
 Component Cooling Water – May 2017
 Compressed Air – Mar 2017FF
 Condensate – Apr 2016
 Containment Structure – Sep 2016
 Containmentment Spray – August 2016
 Control Room Simulator – Jun 2015
 Control Room Ventilation – May 2016
 Digital Systems – Dec 2013 & Oct 2014 PM
 DC Power – Jul 2017
 EDG – **Dec 2017**
 High Pressure Injection – April 2015
 Plant Protection System – **Nov 2017**
 Process Protection System Digital Upgrade – Jun 2016
 Radiation Monitoring – **Jan 2018**
 Radwaste Processing – Aug 2017
 Reactor Coolant – Sep 2014
 RCS Process Control System – Nov 2016
 Reactor Coolant Pumps – Jan 2015
 Refueling Equipment – Mar 2017
 RCS Process Control – Jun 2013
 RHR – Mar 2016
 Safety Injection Pumps Mar 2015
 Spent Fuel Pool – Mar 2015 & Apr 2015
 Steam Generators – Nov 2014

DCPP Programs Reviewed Periodically
 AOV – Jun 2015
 Benchmarking – May 2015 (review biennially)
 Boric Acid Corrosion Control – Apr 2016 (review biennially)

Buried Piping & Tanks – Jan 2017
 Chemistry – Apr 2016
 Cranes – Aug 2016
 Configuration Management – Jul 2015 & Sep 2015
 Corrective Action – **Dec 2017**
 Door Life Cycle Management Plan – Mar 2014
 Emergency Preparedness Exercises – 2/17PM
Employee Concerns Program – Oct. 2017
 Equipment Environmental Qualification – Aug 2017
 Excellence Plan – 6/17PM
 Fire Doors – **Nov 2017**
 Fire Protection (Non-NFPA-805) – Mar 2017
 Fire Protection (NFPA-805) – **Sep 2017**
 Flow Accelerated Corrosion – Apr 2016
 FME – Sep 2017
 Integrated Risk Assessment Program – Jun 2015
 Large Motors – Mar 2016
 Long-Term Capital Planning Process – Dec 2016
 Margin Management – Jan 2017 [Next review 2Q18FF]
 MIDAS – Mar 2015
 Nuclear Fuel Program – **Aug 2017**
 On-Line Maintenance – Apr 2016
 Operating Experience – May 2015 (review biennially)
 Operability Assessment Program – March 2017
 Operational Decision Making – Apr 2015
 PRA Programs (non-seismic) – Sep 2017
 Performance Improvement – **Nov 2017**
 Performance Review Quarterly Meeting – May 2015
 Plant Health Committee – Sep 2017
 Reactivity Management – May 2016
 Safety-Security Interface – Jul 2016
 Self-Assessment – Sep 2016
 Single Point Vulnerabilities – Jan 2015
 Seismic PRA – **Sep 2017**
 Seismically Induced System Interactions – 5/17FF (review biennially)
 Software QA – Dec 2010
 System Engineering – Mar 2015

February 2018 Public Meeting

FF = Fact-finding Meeting PM = Public Meeting Q=Quarter

Transformers, Large – Jan 2017 [2Q18FF after 2R20]
Trending Analysis – Jan 2014
Troubleshooting – Jan 2015
Tsunami Hazard Analysis – **Sep 2017**
Vibration Monitoring – Dec 2015

February 2018 Public Meeting FF = Fact-finding Meeting PM = Public Meeting Q = Quarter

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE	
AGENDA TRANSMITTAL FORM	
MEETING DATE:	February 7, 2018
AGENDA ITEM:	VI-B
AGENDA TITLE:	Documents Provided to the Committee
CONSENT [] ACTION [] INFORMATION [X]	
Staff Summary: Attached for your information are copies of the transmittal memoranda which list the various documents provided to the Committee by PG&E since your last public meeting in October 2017.	
RECOMMENDED COMMITTEE ACTION: None, information item only.	

**December DCISC
List of Documents Transmitted Electronically**

A. Licensing Basis Impact Evaluations

Date	LBIE No.	Title
12/14/17	2017-036	FHARE 153 Rescission

B. NRC Outgoing Correspondence (incl. LERs, LARs, etc.)

Date	Letter No.	Title
12/18/17	DCL-17-108	Spent Fuel Pool Evaluation Supplemental Report, Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident
12/21/17	DCL-17-113, DIL-17-014	Emergency Plan Implementing Procedure Update
12/21/17	DCL-17-112	Nuclear Material Transaction Report for New Fuel
12/26/17	DCL-17-109	Anchor Darling Double Disc Gate Valve Information and Status

C. NRC Incoming Correspondence (including Inspection Reports)

Date	Title
12/18/17	Diablo Canyon Power Plant Unit Nos. 1 and 2 – Staff Assessment of Response to 10 CFR 50.54(f) Information Request – Flood-Causing Mechanism Reevaluation (CAC Nos. MF6029 and MF6040; EPID L-2015-JLD-005)
12/18/17	Diablo Canyon Power Plant, Unit Nos. 1 and 2 – Staff Assessment of Flooding Focused Evaluation (CAC Nos. MF9969 and MF9970; EPID L-2017-JLD-0025 and EPID L-2017-JLD-0026)
12/18/17	Diablo Canyon Power Plant Unit Nos. 1 and 2 – Flood Hazard Mitigation Strategies Assessment (CAC Nos. MF7919 and MF7920; EPID L-2016-JLD-0007)
12/19/17	Diablo Canyon Power Plant, Unit 2 – Residual Heat Removal Suction Weld Joint Flaw Evaluation (CAC No. MF9711; EPID L-2017-LRO-0015)

D. PSRC Documents (PSRC Minutes)

Date	Doc. No.	Title
PSRC Minutes		
11/21/17	2017-026	AD2.ID1, Procedure and Work Plan Use and Adherence
12/19/17	2017-029	AD13.ID5, Inservice Testing Program

E. CAP Documents (RCAs, ACEs, CAP Effectiveness Evaluations)

Type	Doc. No.	Title
RCAs		There are no RCAs for this month.
ACE	SAPN 50948863	DA-Medical Emergency Lot 7

**December DCISC
List of Documents Transmitted Electronically**

Eff. Eval		There are no Effectiveness Evals for this month.
12/1/17		Condition Report Backlog Curves
12/8/17		Condition Report Backlog Curves
12/15/17		Condition Report Backlog Curves
12/22/17		Condition Report Backlog Curves
12/29/17		Condition Report Backlog Curves

F. QV Documents (QPAR, Audit Reports, Audit Schedule, Assessments)

Date	Doc. No.	Title
12/19/17	# 173330010	Quality Performance Assessment Report (QPAR) Second Period 2017; May 1, 2017 through December 1, 2017
12/18/17	FileNet # 172700006	2017 Engineering and Maintenance Rule Programs Audit
12/13/17	Assessment #173450016	New Nuclear Fuel Receipt and Inspection
		There is no new Schedule for this month.

G. Nuclear Safety Culture Monitoring Panel Reports

Date	Doc. No.	Title
		There is no report for this month.

H. Self Assessment/Benchmarking (SA/BM Reports/Schedules)

Date	Doc. No.	Title
		There is no updated Quick Hit Self-Assessment (QHSA) Schedule for this month.
		There is no Formal Benchmarking and Self-Assessments Schedule for this month.
12/21/17	SAPN 50882660	Geos Quick Hit Self-Assessment
12/4/17	SAPN 50948418	Informal Benchmark @ STP
12/5/17	SAPN 50953065	Informal Benchmark/Trip Report FME/SISI
12/12/17	SAPN 50951898	Trip Report – Braidwood OPS ATV
12/19/17	SAPN 50946738	Benchmark – SCANA SIEM Installation

**December DCISC
List of Documents Transmitted Electronically**

I. Performance Information (PPIR, Operating Plan, Station Initiatives, IPMs)

Date	Doc. No.	Title
3/6/17		Operating Plan 2017 – 2021, No new updates this month.
PPIR		
12/20/17		Diablo Canyon Power Plant; Plant Performance Improvement Report Achieving Results; Data: November 2017
Station Initiative		
12/6/17		Learning Services Excellence Plan 2017
12/11/17		Radiation Protection Excellence Plan 2017
12/11/17		Ep.3 Emergency Response Action Plan 2017 (SAPN 50948272)
12/12/17		Leadership Engagement in PI Processes
12/28/17		OF.2-1 Operations Action Plan 2017 (SAPNs 50948217/50934855)
1/3/18		OP.1-1 Operations Action Plan 2018 (SAPN 50948215)
IPM		There are no IPMs for this month.

J. INPO

Date	Doc. No.	Title
		There are no INPO documents for this month.

K. Operational Documents (ODM Minutes, POAs)

Date	Doc. No.	Title
ODMs		There are no ODMs for this month.
POA		There are no new POAs for this month.

L. Safety Limit Violation Report

Date	Doc. No.	Title
		There are no Safety Limit Violation Reports for this month.

M. Significance Determination Process Calculations

Date	Doc. No.	Title
		There are no Significance Determination Process Calculations for this month.

N. Miscellaneous

Date	Title
	There are no Miscellaneous documents for this month.

**December DCISC
List of Documents Transmitted Electronically**

O. Functional Area Documents

Subcommittee	Date/Doc	Title
Maintenance	Week 201748	T+ 1 Critique
	Week 201749	T+ 1 Critique
	Week 201750	T+ 1 Critique
	Week 201751	T+ 1 Critique
	Week 201752	T+ 1 Critique

P. Documents Previously Transmitted during the Month

Date	Doc. No.	Title
		There were no documents previously transmitted during this month.

**November NSOC/DCISC
List of Documents Transmitted Electronically**

A. Licensing Basis Impact Evaluations

Date	LBIE No.	Title
		There are no LBIEs this month.

B. NRC Outgoing Correspondence (incl. LERs, LARs, etc.)

Date	Letter No.	Title
11/8/17	DCL-17-094 DIL-17-011 HBL-17-014 HIL-17-008	Chief Nuclear Officer Contact Information
11/9/17	DCL-17-092	Readiness for Additional Supplemental Inspection
11/20/17	DCL-17-095	Response to NRC Request for Additional Information Regarding "Request for Approval of Alternative for Application of Full Structural Weld Overlay, REP-RHR-SWOL, Units 1 and 2"
11/29/17	DCL-17-101, DIL-17-012	Annual Review of the Emergency Action Levels
11/29/17	DCL-17-102, DIL-17-013	Annual Review of the Emergency Action Levels
11/29/17	DCL-17-099	Reactor Coolant System Pressure and Temperature Limits Report for Units 1 and 2

C. NRC Incoming Correspondence (including Inspection Reports)

Date	Title
11/2/17	Request for Additional Information – Request for Approval for Application of Full Weld Overlay REP-RHR-SWOL, Diablo Canyon Power Plant, Units 1 and 2 (EPID No. L-2017-LLR-0092)
11/30/17	Summary of October 19, 2017, Closed Meeting with Pacific Gas and Electric Company Regarding the Proposed Change to the Security Classification of the Intake Structure for Diablo Canyon Power Plant, Units 1 and 2 (CAC No. MG0255; EPID L-2017-LRM-0019)

D. PSRC Documents

Date	Doc. No.	Title
PSRC Minutes		
10/24/17	2017-024	WECTEC 14078110, Analyses for assessing the radiation environments used for shielding and equipment qualification as contained in WECTEC 14078110-0004, 5, and 6
11/7/17	2017-025	- HIL-17-005, Final Safety Analysis Report Update - HBPP ISFSI License Renewal Application Charter

E. CAP Documents (RCAs, ACEs, CAP Effectiveness Evaluations)

Type	Doc. No.	Title
RCAs	SAPN 50870357	Undetected ECCS Interlock Failure

**November NSOC/DCISC
List of Documents Transmitted Electronically**

	SAPN 50886801	DCPP Inadequate NAMCO Procedure
ACE	SAPN 50931403	DA-PK 9-15 coming in repeatedly (EI)
	SAPN 50942992	DA-Security Officer inattentive to dutie
Eff. Eval		There are no Effectiveness Evals for this month.
11/3/17		Condition Report Backlog Curves
11/10/17		Condition Report Backlog Curves
11/17/17		Condition Report Backlog Curves
11/24/17		Condition Report Backlog Curves

F. QV Documents (QPAR, Audit Reports, Audit Schedule, Assessments)

Date	Doc. No.	Title
		There is no QPAR for this month.
11/9/17		Audit Map: Fire Protection
11/14/17	FileNet #172480003	2017 ISFSI and Fuel Management Audit Report – October 2 through October 23, 2017
11/28/17		Audit Map: ISFSI & Fuel Management
		There is no new Schedule for this month.
11/9/17	Assessment # 172980011	Fire Pump 0-3 Torque Issues
11/22/17	Technical Assessment # 171700001	Technical Assessment of Calculation PGE-019-CALC-003, Revision 5 (Diablo Canyon Units 1 and 2 GSI-191 Debris Generation Calculation)

G. Nuclear Safety Culture Monitoring Panel Reports

Date	Doc. No.	Title
		There is no report for this month.

H. Self Assessment/Benchmarking (SA/BM Reports/Schedules)

Date	Doc. No.	Title
		There is no updated Quick Hit Self-Assessment (QHSA) Schedule for this month.
		There are no Formal Benchmarking and Self-Assessments Schedules for this month.
10/30/17	SAPN 50931868	Quick Hit SA – ICES Report Timeliness

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List of Documents Transmitted Electronically

11/13/17	SAPN 50920703	QHSA Readiness for Self-Approval
11/20/17	SAPN 50888776	2017 CDBI formal self assessment
11/2/17	SAPN 50944028	Informal Benchmark – OE Review Process
11/13/17	SAPN 50931936	WPUG Benchmark Report for Jan 2017
11/13/17	SAPN 50948813	BM: Pre-emptive OE Search Process-95001

I. Performance Information (PPIR, Operating Plan, Station Initiatives, IPMs)

Date	Doc. No.	Title
3/6/17		Operating Plan 2017 – 2021, No new updates this month.
PPIR		
11/15/17		Diablo Canyon Power Plant; Plant Performance Improvement Report Achieving Results; Data: October 2017
Station Initiative		
10/8/17		DCPP Organizational Effectiveness Excellence Plan 2017
11/20/17		Radiation Protection Confined Spaces Excellence Plan 2017
11/27/17		Learning Services Excellence Plan 2017
11/28/17		Radiation Protection Excellence Plan 2017
IPM		There are no IPMs for this month.

J. INPO

Date	Doc. No.	Title
		There are no INPO documents for this month.

K. Operational Documents (ODM Minutes, POAs)

Date	Doc. No.	Title
ODMs		There are no ODMs for this month.
POA		There are no new POAs for this month.

L. Safety Limit Violation Report

Date	Doc. No.	Title
		There are no Safety Limit Violation Reports for this month.

**November NSOC/DCISC
List of Documents Transmitted Electronically**

M. Significance Determination Process Calculations

Date	Doc. No.	Title
		There are no Significance Determination Process Calculations for this month.

N. Miscellaneous

Date	Title
	There are no miscellaneous documents for this month.

O. Functional Area Documents

Subcommittee	Date/Doc	Title
Maintenance	Week 201743	T+1 Critique
	Week 201744	T+1 Critique
	Week 201745	T+1 Critique
	Week 201746	T+1 Critique
	Week 201747	T+1 Critique

P. Documents Previously Transmitted during the Month

Date	Doc. No.	Title
		There are no documents previously transmitted during the month.

NSOC/DCISC
List of Documents Transmitted Electronically

A. Licensing Basis Impact Evaluations

Date	LBIE No.	Title
10/3/17	2017-019	USFAR 3.2 for Class Breaks
10/3/17	2017-023	GDT Tank Rupture
10/3/17	2017-025	VCT Tank Rupture
10/3/17	2017-026	LHUT Tank Rupture
10/18/17	2017-031	FPEE 171
10/24/17	2017-032	Analyses for assessing the radiation environments used for shielding and equipment qualification as contained in WECTEC 14078110-00004, 5, and 6
10/24/17	2017-033	Installed Systems and Features in Fire Areas 4-A and 4-B

B. NRC Outgoing Correspondence (incl. LERs, LARs, etc.)

Date	Letter No.	Title
10/3/17	DCL-17-085	Licensee Event Report 2-2017-001-00, Relief Valve Leakage Resulting in Inoperable Pressurizer Power Operated Relief Valve
10/19/17	DCL-17-089 DIL-17-010	Emergency Plan Implementing Procedure Update

C. NRC Incoming Correspondence (including Inspection Reports)

Date	Title
10/6/17	Diablo Canyon Power Plant, Unit 2 – Relief Requests NDE-SLH U2, NDE-LSL U2, NDE-LHM U2, and NDE-ONV U2, to Allow Use of The Proposed Alternatives due to Impracticalities to Implement Requirements of American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI for Reactor Pressure Vessel Welds for the Third Inservice Inspection Interval (CAC Nos. MF9386, MF9387, MF9388, MF9389, and MF9390)
10/10/17	Acceptance Review – Request for Approval of Alternative for Application of Full Structural Weld Overlay, REP-RHR-SWOL, Diablo Canyon Power Plant, Unit 2 (EPID No. L-2017-LLR-0092)
10/10/17	Notice of Forthcoming Closed Meeting with Pacific Gas and Electric Company to Discuss Security-Related Information for Diablo Canyon Power Plant, Units 1 and 2 (CAC Nos. MF0255 and MF0256; EPID L-2017-LRM-0019)
10/19/17	Acceptance Review – License Amendment Request to Adopt Technical Specification Task Force (TSTF)-547, Revision 1 (EPID No.:” L-2017-LLA-0309)
10/23/17	Diablo Canyon Power Plant, Unit Nos. 1 and 2 – Nuclear Regulatory Commission Response to Request for Extension of Seismic Probabilistic Risk Assessment Submittal Schedule
10/26/17	Diablo Canyon Power Plant – NRC Integrated Inspection Report 05000275/2017003 and 05000323/2017003

NSOC/DCISC
List of Documents Transmitted Electronically

D. PSRC Documents (PSRC Minutes)

Date	Doc. No.	Title
PSRC Minutes		
10/19/17	2017-022	DCL-17-083: Request for Approval for Application of Full Structural Weld Overlay, REP_RHR-SWOL, Units 1 and 2
10/19/17	2017-023	FPEE 171: Barriers Separating the Unit 1 and Unit 2 Turbine Buildings and the Auxiliary Building Roof

E. CAP Documents (RCAs, ACEs, CAP Effectiveness Evaluations)

Type	Doc. No.	Title
RCAs	SAPN 50934855	Response to Nitrogen Leak with Regard to Safety Related Equipment
ACE	SAPN 50934899	7/28/17 Alert – OSC Staffing Time
	SAPN 50935071	DA-M&T Comp: SAF: Engineering Training
Eff. Eval		There are no Effectiveness Evals for this month.
10/6/17		Condition Report Backlog Curve
10/13/17		Condition Report Backlog Curve
10/20/17		Condition Report Backlog Curve
10/27/17		Condition Report Backlog Curve

F. QV Documents (QPAR, Audit Reports, Audit Schedule, Assessments)

Date	Doc. No.	Title
		There is no QPAR for this month.
		There are no Audit Reports for this month.
		There is no new Schedule for this month.
10/12/17	Quality Verification Assessment # 172640031	Operations Requalification Training R17-2 Assessment
10/26/17	Quality Verification Assessment # 172980023	Leadership Engagement with the Corrective Action Review Board (CARB) Process

NSOC/DCISC
List of Documents Transmitted Electronically

G. Nuclear Safety Culture Monitoring Panel Reports

Date	Doc. No.	Title
		There is no Nuclear Safety Culture Monitoring Panel Report for this month.

H. Self Assessment/Benchmarking (SA/BM Reports/Schedules)

Date	Doc. No.	Title
		There is no updated Quick Hit Self-Assessment (QHSA) Schedule for this month.
		There are no Formal Benchmarking and Self-Assessments Schedule for this month.
9/28/17	SAPN 50926856	QHSA – CARB Review of New Plant Issues
10/4/17	SAPN 50926853	QHSA – WCSFM Review of New Plant Issues
10/4/17	SAPN 50935784	QHSA – Casual Eval. W/Trng Solutions
10/10/17	SAPN 50875532	Track QHSA for OM7.ID1 DA Closures
10/11/17	SAPN 50926854	QHSA – NRT Review of New Plant Issues
10/16/17	SAPN 50934873	2Q17 CM QHSA
10/17/17	SAPN 50882767	HYDRO Generation QHSA
10/23/17	SAPN 50924088	Perform Self-assessment on RCE effect mea
10/24/17	SAPN 50876744	Pre Inspection QHSA – Access Control
10/26/17	SAPN 50936975	Quick Hit SA Part 37
10/26/17	SAPN 50947340	INPO ENVP Trip Report

I. Performance Information (PPIR, Operating Plan, Station Initiatives, IPMs)

Date	Doc. No.	Title
3/6/17		Operating Plan 2017 – 2021, No new updates this month.
PPIR		
10/18/17		Diablo Canyon Power Plant; Plant Performance Improvement Report Achieving Results; Data: September 2017

NSOC/DCISC
List of Documents Transmitted Electronically

Station Initiative		There are no updated station initiatives for this month.
IPM		There are no IPMs for this month.

J. INPO

Date	Doc. No.	Title
		There are no INPO documents for this month.

K. Operational Documents (ODM Minutes, POAs)

Date	Doc. No.	Title
ODMs		There are no ODMs for this month.
POA		There are no POAs for this month.

L. Safety Limit Violation Report

Date	Doc. No.	Title
		There are no Safety Limit Violation Reports for this month.

M. Significance Determination Process Calculations

Date	Doc. No.	Title
		There are no Significance Determination Process Calculations for this month.

N. Miscellaneous

Date	Title
	There are no miscellaneous documents for this month.

O. Functional Area Documents

Subcommittee	Date/Doc	Title
Maintenance	Week 201739	T+1 Performance Critique
	Week 201740	T+1 Performance Critique
	Week 201741	T+1 Performance Critique
	Week 201742	T+1 Performance Critique

P. Documents Previously Transmitted during the Month

Date	Doc. No.	Title
		There were no documents previously transmitted during the month.

DCISC
List of Documents Transmitted Electronically

A. Licensing Basis Impact Evaluations

Date	LBIE No.	Title
9/7/17	2017-022	Barrier Separating Ventilation Rooms at El. 154'6" and Stairwell S-5
9/7/17	2017-024	Vital Access Mission Doses
9/12/17	2017-021	FPEE 166
9/19/17	2017-027	Open Phase Protection – Unit 2
9/19/17	2017-029	Fire Door Separating Unit 1 Ventilation Room and Elevator Equipment Room at El. 154'-6"
9/25/17	2017-028	FPEE 167
9/27/17	2017-030	DCP 1000025198 – Revised AST Filter Doses

B. NRC Outgoing Correspondence (incl. LERs, LARs, etc.)

Date	Letter No.	Title
9/6/17	DCL-17-078	Request for Extension of Seismic Probabilistic Risk Assessment Submittal
9/6/17	DCL-17-075	10 CFR 50.46 Annual Report of Emergency Core Cooling System Evaluation Model Changes for Peak Cladding Temperature for 2016
9/7/17	DCL-17-079 DIL-17-008	Emergency Plan Implementing Procedure Update
9/20/17	DCL-17-081	Owner's Activity Report for Unit 1 Twentieth Refueling Outage
9/20/17	DCL-17-080, DIL-17-009	Emergency Plan Update for Appendix D Bases, Introduction, Category C, and Category S and Sections 10, 8, 4, and 2
9/26/17	DCL-17-083	Request for Approval of Alternative for Application of Full Structural Weld Overlay, REP-RHR-SWOL, Units 1 and 2
9/28/17	DCL-17-076	License Amendment Request 17-01 Revision to Technical Specifications to Adopt Technical Specifications Task Force TSTF-547, Revision 1, "Clarification of Rod Position Requirements"

C. NRC Incoming Correspondence (including Inspection Reports)

Date	Title
9/25/17	Diablo Canyon Power Plant, Units 1 and 2 – Issuance of Amendments Re: Emergency Action Level Scheme Change (CAC Nos. MF8528 and MF8529)
9/27/17	Diablo Canyon Power Plant – NRC Supplemental Inspection Report and Assessment Follow-Up Letter; 05000275/2017008 and 05000323/2017008

D. NSOC/PSRC Documents (NSOC Minutes, NSOC Responses, PSRC Minutes)

Date	Doc. No.	Title
NSOC		There are no NSOC documents for this month.

DCISC
List of Documents Transmitted Electronically

PSRC Minutes		
9/7/17	2017-016	Emergency Plan, Sections 2, 4, 8, 10, and Appendix D
8/29/17	2017-018	FPEE 168 UFSAR CR Y-3.2(10) 14078110-C-M-00007 14078110-C-M-00003 14078110-C-M-00001 14078110-C-M-00002
8/17/17	2017-017	FPEE 170 FPEE 166
9/12/17	2017-019	DCP 1000025149, "Open Phase Protection - Unit 2"
9/19/17	2017-020	FPEE 167 FPEE 169

E. CAP Documents (RCAs, ACEs, CAP Effectiveness Evaluations)

Type	Doc. No.	Title
RCAs		There are no RCAs for this month.
ACE	SAPN 50934650	DA-2-RV-355 leaking by
Eff. Eval	SAPN 50818638	DA-1R19 Fuel Handling Critical Path Dela

F. QV Documents (QPAR, Audit Reports, Audit Schedule, Assessments)

Date	Doc. No.	Title
		There is no QPAR for this month.
9/20/17	FileNet #162860010	2017 Problem Prevention and Corrective Action Audit
		There is no new Schedule for this month.
8/30/17	Assessment # 172400008	Work Control T-Week Process

G. Nuclear Safety Culture Monitoring Panel Reports

Date	Doc. No.	Title
		There is no Nuclear Safety Culture Monitoring Panel Report for this month.

DCISC
List of Documents Transmitted Electronically

H. Self Assessment/Benchmarking (SA/BM Reports/Schedules)

Date	Doc. No.	Title
		There is no updated Quick Hit Self-Assessment (QHSA) Schedule for this month.
		There is no Formal Benchmarking and Self-Assessments Schedule"
9/5/17	SAPN 50907664	Maintenance Quick HIT Self-Assessment
9/5/17	SAPN 50910374	NFPA 805 QHSA#3 Readiness Review
9/19/17	SAPN 50926855	QHSA – DRT Review of New Plant Issues
9/5/17	SAPN 50840867	Benchmarking CAP Record Storage
9/5/17	SAPN 50939193	Required Self-Assessment Guidance BM
9/7/17	SAPN 50936698	Confined Space Informal Benchmark

I. Performance Information (PPIR, Operating Plan, Station Initiatives, IPMs)

Date	Doc. No.	Title
3/6/17		Operating Plan 2017 – 2021, No new updates this month.
PPIR		
9/14/17		Diablo Canyon Power Plant; Plant Performance Improvement Report Achieving Results; Data: August 2017
Station Initiative		
9/6/17		Learning Services Excellence Plan 2017; Our Path Forward
9/19/17		Security Services Department Excellence Plan 2017; Our Path Forward
IPM		There are no IPMs this month.

J. INPO

Date	Doc. No.	Title
		There are no INPO documents for this month.

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K. Operational Documents (ODM Minutes, POAs)

Date	Doc. No.	Title
ODMs	SAPN 50941848	Unit 1 Main Bank Transformer Phase C Neutral Bus Connection
POA		There are no new POAs this month.

L. Safety Limit Violation Report

Date	Doc. No.	Title
		There are no Safety Limit Violation Reports for this month.

M. Significance Determination Process Calculations

Date	Doc. No.	Title
10/4/17	PRA Calculation SDP 17-02	Leakage of Unit 2 PCV-455C Backup Nitrogen Accumulator

N. Miscellaneous

Date	Title
	There are no miscellaneous documents this month.

O. Functional Area Documents

Subcommittee	Date/Doc	Title
Maintenance	Week 201734	T+1 Critique
	Week 201735	T+1 Critique
	Week 201736	T+1 Critique
	Week 201737	T+1 Critique
	Week 201738	T+1 Critique

P. Documents Previously Transmitted during the Month

Date	Doc. No.	Title
		There are no documents previously transmitted during the month.

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

AGENDA TRANSMITTAL FORM

MEETING DATE:	February 7, 2018
AGENDA ITEM:	VII, XIX & XX
AGENDA TITLE:	Consultant & Asst. Legal Counsel Reports; Receive, Accept and Authorize Transmittal of Fact Finding Reports, and receive report by Asst. Legal Counsel.

CONSENT [☐] ACTION [☒] INFORMATION [☒]

Staff Summary: It is anticipated that oral and written reports will be presented at the meeting by Technical Consultants Mr. Wardell and Mr. McWhorter and DCISC Assistant Legal Counsel Mr. Rathie concerning items listed or on other matters.

Fact finding reports may be submitted for consideration and comment by members and consultants since the last public meeting of the DCISC in October 2017. These reports may be received by the Committee, accepted as to form and content and be authorized for transmittal to PG&E for its consideration.

Fact finding reports become a part of the next DCISC Annual Report.

The report of the Assistant Legal Counsel will include the discussion of a potential role for the Committee after the expiration of the operating licenses for the power plant.

RECOMMENDED COMMITTEE ACTION: Receive reports by Consultants and Assistant Legal Counsel and provide direction.

Motions to receive and accept transmittal of fact finding reports to PG&E concerning fact-findings conducted on October 30-31, November 13-14 and December 12-13, 2017 and on January 18-19, 2018.

Motion to provide direction as appropriate concerning a potential role for the Committee after expiration of the operating licenses for the power plant.