UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD
ARLINGTON TX 76011-4511

December 28, 2015

EA-15-252
EA-14-010

Mr. Edward D. Halpin, Senior Vice President
and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT – NRC INSPECTION PROCEDURE 95001, SUPPLEMENTAL INSPECTION REPORT 05000275/2015503, 05000323/2015503, AND FOLLOW-UP ASSESSMENT LETTER

Dear Mr. Halpin:

On December 15, 2015, the Nuclear Regulatory Commission (NRC) completed a supplemental inspection pursuant to Inspection Procedure 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," at the Diablo Canyon Power Plant. The enclosed inspection report documents the inspection results, which were discussed with you and other members of your staff during an on-site meeting on October 8, 2015, and during the exit meeting on December 15, 2015.

As required by the NRC Reactor Oversight Process Action Matrix, this supplemental inspection was performed because one finding of White safety significance was identified in the Emergency Preparedness Cornerstone. Diablo Canyon Power Plant entered the Regulatory Response Column beginning the fourth quarter of 2014 for a Greater-than-Green finding in the Emergency Preparedness Cornerstone (End of Cycle Assessment letter, dated March 4, 2015, ML15063A590). The finding involved a failure to obtain prior NRC approval for an emergency plan change that reduced the effectiveness of the emergency plan. Specifically, on November 4, 2005, without approval from the NRC, Diablo Canyon Power Plant staff removed instructions in emergency plan implementing procedures for making protective action recommendations for members of the public on the ocean within the 10-mile emergency planning zone, thereby reducing the plan's effectiveness.

This violation was previously documented in NRC Inspection Report 05000275/2014502, 05000323/2014502, dated December 1, 2014 (ML14335A774), and NRC Inspection Report 05000275/2015502, 05000323/2015502, dated February 11, 2015 (ML15042A544). The NRC was informed by your letter, dated September 10, 2015 (ML15253A762), of your readiness for us to conduct this supplemental inspection.

The objectives of this supplemental inspection were to provide assurance that (1) the root causes and the contributing causes for the risk-significant performance issue were understood, (2) the extent of condition and extent of cause of the issue were identified, and (3) corrective actions were or will be sufficient to address and preclude repetition of the root and contributing causes. The inspection also reviewed four additional reductions in the effectiveness of the Diablo Canyon Power Plant emergency plan occurring between June 6, 1988, and October 8, 2015, identified by your staff through the Emergency Plan Licensing Basis Verification Project. The NRC has evaluated these examples and determined that two are properly characterized as Severity Level III violations and two as Severity Level IV violations; however, because these violations were identified by Diablo Canyon Power Plant through an extent of condition review, their causes are similar to the causes for the original violation, and the corrective actions for the original violation will also correct these violations, the NRC has determined that enforcement discretion is warranted for all four violations as described in the NRC Enforcement Policy, Section 3.3.

The NRC determined that your corrective actions, as itemized in the root cause evaluation, were appropriate to resolve the deficiency related to risk-significant performance issues. The NRC also determined that your root cause, extent of condition, and extent of cause evaluations appropriately considered the safety culture components as described in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program." The corrective actions completed, and those scheduled for completion, appear to be sufficient to prevent recurrence of these issues.

Based on the results of this inspection, the White finding is closed. With the closure of this finding, and as a result of our continuous review of plant performance, the NRC has updated its assessment of Diablo Canyon Power Plant, Units 1 and 2. This assessment supplements, but does not supersede, the mid-cycle letter issued on September 1, 2015. Based on successful completion of the supplemental inspection, and issuance of this inspection report, Diablo Canyon Power Plant, Units 1 and 2, has transitioned to the licensee response column of the NRC Action Matrix (Column 1) as of the date of this letter. However, consistent with IMC 0305, the finding will still be considered for agency actions in accordance with the Reactor Oversight Process Action Matrix until December 31, 2015.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, “Public Inspections, Exemptions, Requests for Withholding,” a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC’s Public

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Anton Vegel
Director, Division of Reactor Safety

Docket Nos. 50-275 and 50-323
License Nos. DPR-80 and DPR-82

Enclosure:
Inspection Report 05000275/2015503,
05000323/2015503 w/Attachment:
Supplemental Information

cc: Electronic Distribution for Diablo Canyon

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Sincerely,

/RA/

Anton Vegel
Director, Division of Reactor Safety

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Letter to Edward D. Halpin from Anton Vegel, dated December 28, 2015

SUBJECT: DIABLO CANYON POWER PLANT – NRC INSPECTION PROCEDURE 95001, SUPPLEMENTAL INSPECTION REPORT 05000275/2015503, 05000323/2015503, AND FOLLOW-UP ASSESSMENT LETTER

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Dockets:	05000275, 05000323
Licenses:	DPR-80; DPR-82
Report:	05000275/2015503, 05000323/2015503
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Nuclear Power Plant, Units 1 and 2
Location:	Avila Beach, California
Dates:	September 28 through December 15, 2015
Inspector:	P. Elkmann, Senior Emergency Preparedness Inspector G. Guerra, CHP, Emergency Preparedness Inspector
Approved By:	Mark S. Haire Chief, Plant Support Branch 1 Division of Reactor Safety

SUMMARY

IR 05000275/2015503, 05000323/2015503; 09/28/2015 – 12/15/2015; Diablo Canyon Power Plant, Units 1 and 2; Inspection Report; Supplemental Inspection - Inspection Procedure 95001.

This supplemental inspection was conducted by two region-based emergency preparedness inspectors. No findings were identified. The Nuclear Regulatory Commission (NRC's) program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Emergency Preparedness

The inspectors performed this supplemental inspection in accordance with Inspection Procedure (IP) 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," to assess the licensee's evaluation associated with a failure to obtain prior NRC approval for an emergency plan change that reduced the effectiveness of the emergency plan. The finding associated with this issue was first documented in IR 05000275/2014502, 05000323/2014502, dated December 1, 2014 (ML14335A774). The NRC provided the final significance determination of these issues to the licensee on February 11, 2015 (ML15042A544). Prior to the issuance of the final significance determination, Diablo Canyon Power Plant was in the Licensee Response Column. Based on this finding, Diablo Canyon Power Plant entered the Regulatory Response Column beginning the fourth quarter of 2014. The NRC staff was informed by letter, dated September 10, 2015 (ML15253A762), of Diablo Canyon Power Plant's readiness for this supplemental inspection.

The inspectors concluded that the licensee performed an adequate evaluation of the issue. The inspectors also concluded that the root cause evaluation for the risk-significant performance issue appropriately evaluated the root and contributing causes, adequately addressed the extent of condition and extent of cause, assessed safety culture, and established corrective actions. The inspectors concluded that the licensee's root cause evaluation and corrective actions were sufficient to address the causes and prevent recurrence. The inspectors also concluded that the licensee's assessment of the Diablo Canyon Power Plant safety culture accurately reflected the conditions at the site. As a result, the inspectors concluded that the licensee appropriately addressed the White finding, and in accordance with the guidance in NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," the White finding will be considered in assessing plant performance through December 31, 2015.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA4 Supplemental Inspection (95001)

.01 Inspection Scope

The inspectors performed this inspection in accordance with IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," because the licensee entered the regulatory response column of the NRC action matrix in the fourth quarter of 2014 as a result of one NRC-white inspection finding in the Emergency Preparedness Cornerstone. The finding is summarized below:

The licensee failed to obtain NRC approval to implement changes to a licensee emergency plan that reduced the effectiveness of the plan in accordance with the requirements of 10 CFR 50.54(q)(4), which resulted in the licensee failing to meet the requirement to develop and maintain in place guidance for the choice of protective actions during an emergency in accordance with the requirements of 10 CFR 50.47(b)(10). Specifically, on November 4, 2005, without approval from the NRC, Diablo Canyon Power Plant staff removed instructions in emergency plan implementing procedures for making protective action recommendations for members of the public on the ocean within the 10-mile emergency planning zone. This change in implementing procedures reduced the plan's effectiveness.

The objectives of this supplemental inspection included the following:

- Provide assurance that the root causes and contributing causes of risk-significant performance issues were understood
- Provide assurance that the extent of condition and extent of cause of risk-significant performance issues were identified
- Provide assurance that the licensee's corrective actions for risk-significant performance issues were sufficient to address the root and contributing causes and prevent recurrence
- Evaluate additional examples of reductions in the effectiveness of the Diablo Canyon Power Plant emergency plan occurring between June 6, 1988, and August 14, 2015, as identified by the licensee through the licensee's emergency preparedness licensing basis verification project

The licensee staff informed the NRC staff by letter, dated September 10, 2015, of their readiness for this supplemental inspection (ML15253A762). The licensee performed a root cause analysis (RCA) which was identified as SAP Notification (SAPN) 50656762, "Improper Change for Ocean PAR Process," Revision 1, August 14, 2015, in preparation for the inspection to identify the process and organizational weaknesses that resulted in the White finding. As part of the RCA, the licensee also assessed their safety culture to

identify any contribution to the root or contributing causes. The licensee provided the NRC inspectors a copy of their RCA on September 29, 2015, along with other supporting evaluations and documentation.

The inspectors reviewed the licensee's RCA and other corrective action program evaluations the licensee conducted in support of, or as a result of, the RCA. The inspectors reviewed corrective actions that the licensee had taken to address the identified causes. The inspectors also held discussions and conducted interviews with licensee personnel to determine if the root and contributing causes, and the contribution of safety culture components, were understood, as well as whether completed or planned corrective actions were adequate to address the causes and prevent recurrence.

.02 Evaluation of Inspection Requirements

02.01 Problem Identification

a. Determine that the evaluation documented who identified the issue (i.e., licensee-identified, self-revealing, or NRC-identified) and under what conditions the issue was identified

The licensee's RCA included a detailed section on the circumstances through which the issue was discovered. The licensee conducted an emergency preparedness benchmarking activity in November 2013, and on November 12, 2013, entered SAPN 50593750 and 50599009 into their corrective action program to document the need to evaluate the adequacy of the protective action recommendation process for the ocean portion of the licensee's plume phase emergency planning zone. The issue was subsequently discussed with NRC inspectors during an onsite inspection conducted November 18-22, 2013; this inspection opened Unresolved Item (URI) 05000275/ 2013005-01, 05000323/2013005-01 to document the issue (ML14043A056). The URI was closed in NRC Inspection Report 05000275/2014502, 05000323/2014502, dated December 1, 2014 (ML14335A774).

The inspectors concluded that the licensee's evaluation adequately documented who identified the issue and under what conditions the issue was identified. The RCA also discussed URI 05000275/2013005-01, 05000323/2013005-01.

b. Determine that the evaluation documented how long the issue existed and prior opportunities for identification

The need to evaluate the adequacy of the licensee's protective action recommendation process for the ocean portion of the emergency planning zone issue was identified on November 12, 2013. The licensee's RCA described the initial processes for determining and communicating protective action recommendations established in Procedures G-3, "Notification of Offsite Agencies," and RB-10, "Protective Action Guidelines," Revision 0, dated October 12, 1981. It also described how changes in communication procedures made in Procedure G-3, Revision 18, July 17, 1991, and Revision 44, November 2, 2005, created a non-compliance with regulatory requirements.

The licensee documented prior opportunities for EP staff to identify the issue on RCA Attachment 16.4, "Missed Opportunities Matrix."

The inspectors concluded that the licensee's evaluation was adequate with respect to identifying how long the issue existed and prior opportunities for identification.

c. Determine that the evaluation documented the plant-specific risk consequences, as applicable, and compliance concerns associated with the issue

The licensee's RCA included a safety significance section documenting that agreements were in place with the United States Coast Guard to take predetermined protective actions for the ocean adjacent to the licensee's site from 1981 through the present. These actions included a 2 nautical mile exclusion zone upon declaration of a site area emergency and a 5 nautical mile exclusion zone upon declaration of a general emergency. The licensee concluded that changes to site emergency plan implementing procedures did not affect these predetermined actions. The licensee's RCA documented a link to RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014, which documents that Diablo Canyon Power Plant removed requirements to directly contact the Coast Guard upon declaration of a general emergency classification on February 3, 2003, which could have caused a delay in implementing necessary actions outside of the 5 nautical mile exclusion zone.

The inspectors concluded that the licensee appropriately documented the risk consequences and compliance concerns associated with the issue.

d. Findings and Observations

No findings were identified.

02.02 Root Cause, Extent of Condition, and Extent of Cause Evaluation

a. Determine that the problem was evaluated using a systematic methodology to identify the root and contributing causes

The licensee's RCA included an event description, a summary of root and contributing causes, a discussion of internal and external operating experience, an extent of condition analysis, an extent of cause analysis, and a safety culture assessment. It identified that systematic methods were used to identify root and contributing causes, including a comparative timeline, barrier analysis, factor tree analysis, and an event and causal factors analysis. The licensee documented an organizational and programmatic effectiveness assessment as RCA Attachment 16.6, and performed a training performance analysis that concluded there are no current knowledge or competency gaps. The licensee's RCA identified three primary attributes which contributed to this issue: a lack of clarity in documentation, a lack of quality in guidance for making procedure changes, and a loss of knowledge among emergency preparedness staff. The licensee did not perform a human factors analysis for this issue and determined that corrective actions taken for RCA 50599999, "E-Plan Non-Compliance

Section 5.16.4," dated March 18, 2014, adequately addressed the human performance problems that contributed to the White finding.

The licensee identified that the causes associated with this White finding were identical with the causes determined by RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014. The inspectors reviewed RCA 50599999 and determined that it identified one root cause (RC) and two contributing causes (CC):

- Diablo Canyon Power Plant's 10 CFR 50.54(q) process lacked procedural guidance for evaluating the impact of changes to emergency plan implementing procedures on the license basis to ensure consistent evaluations (RC)

- Emergency Preparedness department staff relied on institutional knowledge to make changes to the emergency plan and implementing procedures (CC1)

- The November 2005 Diablo Canyon Power Plant emergency plan poorly documented the description of ocean protective action recommendations (PAR) and emergency planning zones (CC2)

The inspectors concluded the licensee performed a sufficient analysis of the issues, using appropriate analysis methods to identify root and contributing causes of the event.

b. Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem

The licensee's RCA included a condition statement, a risk consequence and compliance analysis, an event description, a summary of root and contributing causes, a discussion of internal and external Operating Experience, an extent of condition analysis and resulting actions, an extent of cause analysis and resulting actions, and a safety culture assessment. The use of several systematic methods of analysis reinforced the identified causes. The licensee's RCA identified that the causes associated with this White Finding were identical with the causes determined by RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014. RCA 50599999 identified one root cause and two contributing causes.

The inspectors concluded the licensee's RCA was adequately performed and included a level of detail commensurate with the identified performance deficiency. The inspectors concluded the identified causes, corrective actions, and actions taken to identify the extent of problems provided evidence of a process that was methodical, in-depth, and thorough.

c. Determine that the root cause evaluation included a consideration of prior occurrences of the problem and knowledge of prior operating experience

The licensee's RCA included a discussion of internal and external operating experience applicable to the issue. The licensee performed an extensive review of their corrective action system and did not identify any similar prior occurrences of the problem. A review of the internal operating experience program also did not identify any similar problems.

The licensee also reviewed root cause analyses from September 2011 to August 2014 and did not identify any previous analyses that should have identified the issue through an extent of cause or condition review. The licensee reviewed eleven examples of violations of 10 CFR 50.54(q) identified by the NRC between 2012 and 2015 and concluded that the corrective actions taken by other licensees were similar in scope and detail to those identified in the RCA.

The inspectors concluded that the root cause evaluation included a thorough review of prior and precursor problems, and properly evaluated internal and industry operating experience.

d. Determine that the root cause evaluation addresses the extent of condition and the extent of cause of the problem

The condition identified for this problem was an implementing procedure that was not consistent with the emergency preparedness licensing basis. The licensee's evaluation included an evaluation of the extent of condition and concluded that the condition could apply to all of the emergency plan implementing procedures. The licensee subsequently took actions to identify and correct deviations between the site emergency plan and emergency plan implementing procedures (SAPN 50537581, "LTCA - QAAF EP Basis not clearly defined"). The licensee also concluded that extent of condition was identical to the extent of condition identified for RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014.

The licensee's evaluation also included an evaluation of the extent of cause for the root cause to determine if other departments or activities with similar processes could be vulnerable to the root cause. The licensee concluded that similar issues could occur in the fire protection, environmental protection, and security programs. The same program vulnerabilities had been previously identified in RCA 50599999, which concluded that these programs had not established adequate procedural guidance or training programs that would allow for systematic and consistent evaluations to maintain their licensing bases. The RCA team reviewed the responses to RCA 5059999, Task 59 (Environmental Planning), Task 61 (Fire Protection), and Task 62 (Security), and concluded that additional documentary evidence was required to demonstrate that the program vulnerabilities had been adequately addressed.

The inspectors concluded that the licensee's evaluation adequately addressed the extent of condition and the extent of cause of the problem through a disciplined process based on a review of the evaluation and discussions with licensee staff personnel.

e. Determine that the root cause, extent of condition, and extent of cause evaluations appropriately considered the safety culture components as described in Inspection Manual Chapter (IMC) 0305

The licensee performed a safety culture assessment and included a safety culture worksheet in the RCA. The licensee identified that the safety culture aspects of Operating Experience (P.5), Standards (X.6), and Challenge Assumptions (X.11) applied

to the root cause. The aspects of Documentation (H.7) and Training (H.9) were determined to apply to the contributing causes.

The inspectors concluded that the licensee appropriately considered the safety culture components in the root cause and contributing causes; and that corrective actions addressed the weaknesses. The inspectors concluded that licensee Procedure OM7.ID3, Attachment 4, DCPP Form 69-21524, “Safety Culture Analysis,” dated May 22, 2014, Step 3, required the RCA team to evaluate whether issues associated with any of the safety culture aspects constituted independent causes, and the team performed the analysis as directed by procedure. However, the RCA did not document this analysis.

f. Findings

No findings were identified.

02.03 Corrective Actions

a. Determine that appropriate corrective actions are specified for each root and contributing cause or that the licensee has an adequate evaluation for why no corrective actions are necessary

The licensee’s RCA 50656762 identified that the causes associated with this White finding were identical with the causes determined by RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014. RCA 50599999 identified one root cause and two contributing causes. These were addressed by 10 corrective actions to prevent recurrence under Corrective Actions to Prevent Recurrence (CAPR) 1, 2, and 3, Corrective Actions (CORR) 1 and 2, and Extent of Condition Corrective Action (EOC CORR) 1 and 2. The corrective actions were aligned with the identified causes and adequately addressed the issues. The corrective actions included the following:

- Revise Procedure OM10.ID2, “Emergency Plan Revision and Review,” to align with Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors" to assure it fulfills regulatory requirements for emergency plan and implementing procedure changes, and their associated evaluations (CAPR1)

- Revise OM10.ID2 to provide specific instructions for evaluating the impact of changes to implementing procedures on the emergency plan (CAPR2)

- Revise OM10.ID2 to add additional responsibilities of oversight of the 10 CFR 50.54(q) program (CAPR2)

- Revise OM10.ID2 to add approver signature requirements for effectiveness reviews (CAPR2)

- Revise TS3.ID2, “Licensing Basis Impact Evaluation,” to clarify the scope of the emergency plan to include the plan and the EPIPs (CAPR3)

- Implement a systematic training and qualification process for staff performing 10 CFR 50.54(q) evaluations (CORR1)

- Revise the site emergency plan to improve the descriptions of the ocean protective action recommendation and the definition of the emergency planning zone (CORR2)

- Perform a line-by-line comparison of the current emergency plan to the current implementing procedures to ensure that all procedures are consistent with the plan (EOC CORR 1; SAPN 50537581,"LTCA - QAAF EP Basis not clearly defined")

- Establish project expectations for the emergency preparedness licensing basis verification project to identify aspects of the plan that are poorly described or ambiguously defined (EOC CORR 1)

- Compare the emergency plan, Revision 4, to the original Revision 3, Change 3, as approved by the NRC in 1985, and ensure that all changes that were made were adequately evaluated and appropriate (EOC CORR 2)

The inspectors concluded that appropriate corrective actions were developed for the root cause, contributing causes, the extent of condition, and the extent of cause.

b. Determine that the corrective actions have been prioritized with consideration of risk significance and regulatory compliance

The licensee documented 10 corrective actions in Condition Report SAPN 50599999 and all had been completed as of August 14, 2015. A final effectiveness review for the correction of this issue is scheduled to be completed by April 30, 2016. The inspectors concluded that the additional corrective actions which expanded the scope of some of the performed actions were a licensee enhancement-initiative and are not required to address the causes or regulatory compliance of the issue that resulted in this inspection. Additional condition reports that were reviewed are listed in the attachment to this report.

The inspectors concluded the licensee had appropriately prioritized and scheduled corrective actions for the identified root and contributing causes. The inspectors noted that the effectiveness review required that a newly-established program metric for the quality of 10 CFR 50.54(q) reviews be in the Green band for two successive quarters for the corrective actions to be considered effective. However, the evaluation criteria did not require a minimum number of 10 CFR 50.54(q) evaluations to be evaluated, so the statistically validity of the effectiveness review was not assured.

c. Determine that a schedule has been established for implementing and completing the corrective actions

As discussed in Section 02.03.b, the licensee documented 10 corrective actions and all were completed as of August 14, 2015. A final effectiveness review has been scheduled for April 30, 2016.

The inspectors concluded that an appropriate schedule had been established for implementing and completing the corrective actions.

d. Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence

The licensee performed three independent assessments of the root cause analysis between June 2015 and August 2015 to determine if appropriate priorities were assigned and to review the completed actions. Additionally, a final effectiveness review has been scheduled for April 30, 2016. The licensee's RCA includes an effectiveness review plan that establishes the success criteria to help ensure corrective actions were appropriate and effective.

The inspectors concluded the licensee has developed appropriate evaluation criteria for performing effectiveness reviews of the corrective actions. The inspectors concluded the schedule was appropriate given the implementation schedule of the corrective actions.

e. Determine that the corrective actions planned or taken adequately address a Notice of Violation (NOV) that was the basis for the supplemental inspection, if applicable

The licensee took interim compensatory measures to address the issue on December 26, 2013. These measures consisted of a shift order to control room operators and an emergency preparedness bulletin to the emergency response organization. The licensee restored programmatic compliance with Procedures G-3, Revision 56, and RB-10, Revision 17, effective February 13, 2014, which provide an explicit protective action recommendation for the ocean and communicates that recommendation to offsite authorities. The inspectors concluded that these actions were adequate to restore compliance with regulatory requirements.

The NRC issued an NOV to the licensee for implementing a change to emergency plan implementing procedures that decreased the effectiveness of the approved emergency plan without application to, and approval by, the Commission, which resulted in the licensee failing to follow and maintain in effect an emergency plan meeting the standards in 10 CFR 50.47(b). Specifically, without approval from the NRC, the licensee reduced its emergency plan's effectiveness by removing instructions from its emergency plan implementing procedures for making protective action recommendations for affected areas over the ocean within the 10-mile emergency planning zone. The licensee was not required to respond to the NOV. The licensee committed to performing a comprehensive verification and validation of all changes to the licensee emergency plan and emergency plan implementing procedures. This action was completed on

August 14, 2015. The inspectors concluded that the licensee's RCA and corrective actions addressed the NOV.

f. Findings

No findings were identified.

02.04 Evaluation of IMC 0305 Criteria for Treatment of Old Design Issues

The licensee did not request credit for self-identification of an old design issue. Therefore, the subject risk-significant issues were not evaluated against the IMC 0305 criteria for treatment of an old design issue.

.03 Evaluation of Additional Examples of a Reduction in Effectiveness of the Emergency Plan

The licensee reviewed all revisions of the emergency plan between Revision 3, Change 3, approved by the NRC in 1985 and August 2015, and identified 798 commitments. The licensee concluded 109 commitments were not clearly implemented in the implementing procedures and, of these, 21 were identified as having no implementation. Nine examples were identified in which procedures conflicted with the emergency plan. The licensee also identified 1,311 changes made to the emergency plan between 1985 and 2015 and concluded that 407 required additional analysis. The licensee identified 10 examples of inadequate change documentation and concluded that four changes reduced the effectiveness of the emergency plan without having obtained the prior approval of the NRC.

The inspectors reviewed the 109 commitments identified by the licensee as not clearly implemented and the 407 examples of emergency plan changes requiring additional analysis. The inspectors also reviewed the emergency plan changes identified by the licensee as reductions in the effectiveness of the plan implemented without the prior approval of the NRC.

03.01 Control Room Dose Assessment Capabilities

a. Description

The licensee identified that Emergency Plan, Revision 3, Changes 15 and 16, and Revision 4, Change 10, reduced the effectiveness of the emergency plan by removing the Enterprise Architecture Repository Systems (EARS) dose assessment computer from the control room and replacing it with a computerized version of Procedure EP R-2, "Release of Airborne Radioactive Materials Initial Assessment." Revision 3, Change 15, was implemented March 22, 1996; Revision 3, Change 16, was implemented October 10, 1997; and Revision 4, Change 10, was implemented February 18, 2010. A licensing basis review dated August 3, 1995, determined that the implementation of EP R-2 was an enhancement to the effectiveness of the emergency plan; the licensing basis review did not identify the capability differences between EARS and computerized EP R-2. The licensee subsequently determined (SAPN 50620767, Task 1; SAPN 50678360)

on December 14, 2014, that the replacement of EARS by computerized EP R-2 reduced the effectiveness of the emergency plan because EP R-2 did not have the assessment capabilities of EARS. Specifically, EARS had the capability to assess radioactive plumes to the emergency planning zone boundary and EP R-2 was limited to assessing radioactive plumes at the site boundary. The licensee identified the difference in assessment capabilities in LBIE 2009-022 and incorrectly concluded that the NRC had approved the more limited capabilities for the control room via Letter DCL-95-173. The licensee restored compliance on December 23, 2014, with the implementation of the Meteorological Information and Dispersion Assessment System (MIDAS) in the control room.

The licensee performed root cause analysis SAPN 50678360, dated August 27, 2014, to identify the root causes and appropriate corrective actions for this issue. The licensee concluded that the root cause was that the emergency plan revision process and the licensing basis impact evaluation process allowed for making conclusions about the acceptability of emergency plan changes without requiring a verification of the licensing basis. The licensee identified that CAPRs 1, 2, and 3, and CORR 1 identified in RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014, addressed the root cause of this issue. The licensee also determined that the Human Factors Analysis and the Organizational and Programmatic Effectiveness Evaluation for RCA 50599999 applied to this issue, and that no additional corrective actions were required.

b. Findings

Reducing a licensee's assessment capability is a violation of 10 CFR 50.54(q)(4) which is normally categorized at Severity Level III and considered for escalated enforcement action. However, the NRC has concluded that the exercise of enforcement discretion is warranted in accordance with Section 3.3 of the Enforcement Policy, because the violation was identified by Diablo Canyon Power Plant as part of the extent of condition for a previous enforcement action, the violation has the same or similar root causes as the violation for which enforcement action was previously taken, the violation does not substantially change the safety significance or the character of the initial violation, and the violation has been corrected.

03.02 Control Room Protective Action Recommendation Processes

a. Description

The licensee identified that Procedure EP R-2, “Release of Airborne Radioactive Materials,” Revision 6, dated June 6, 1988, reduced the effectiveness of the emergency plan by removing procedure steps that directed the control room to perform dose assessments for the entire emergency planning zone. Specifically, the procedure directed the control room to only evaluate protective action zones 1 and 2. Although the licensee had methods available in the control room to perform a complete assessment of the impact within the emergency planning zone, they lacked procedural guidance to evaluate areas greater than 6 miles from the plant. The licensee determined that

additional changes further degraded the ability of the control room to develop appropriate protective action recommendations; specifically,

- EP R-2, Revision 18, dated June 6, 1995, implemented a computer-based version of Procedure EP R-2 as the primary dose assessment method in the control room. The licensee failed to recognize that R-2 did not have the same capabilities as the EARS dose assessment program

- The dose assessment program EARS was physically removed from the Control Room between August 4 and September 5, 1995

- Emergency Plan, Revision 3.15, dated March 1996, removed references to the use of EARS in the control room

- EP RB-10, “Protective Action Recommendations,” Revision 8, implemented September 4, 2002, removed directions to consider shelter-in-place outside of protective action zones 1 and 2

- Emergency Plan, Revision 4.10, implemented February 18, 2010, described the computer-based version of Procedure EP R-2 as only having the capability to evaluate conditions at the site boundary

The licensee restored compliance on November 11, 2014, with implementation of an interim measure for the control room to shelter-in-place protective action zones in the downwind direction outside of zones 1 and 2. Permanent compliance was restored with the implementation of Procedure RB-10, Revision 18, and R-2, Revision 31, on December 23, 2014.

The licensee performed root cause analysis SAPN 50673587, dated August 27, 2014, to identify the root causes and appropriate corrective actions for this issue. The licensee concluded that the root cause was that the emergency plan revision process and the Licensing Basis Impact Evaluation process allowed for making conclusions about the acceptability of emergency plan changes without requiring a verification of the licensing basis. The licensee identified that CAPRs 1, 2, and 3, and CORR 1 identified in RCA 50599999, "E-Plan Non-Compliance Section 5.16.4," dated March 18, 2014, addressed the root cause of this issue. The licensee also determined that the Human Factors Analysis and the Organizational and Programmatic Effectiveness Evaluation for RCA 50599999 applied to this issue, and that no additional corrective actions were required.

b. Findings

Reducing a licensee's capability to make protective action recommendations for protecting the health and safety of the public is a violation of 10 CFR 50.54(q)(4) which is normally categorized at Severity Level III and considered for escalated enforcement action. However, the NRC has concluded that the exercise of enforcement discretion is warranted in accordance with Section 3.3 of the Enforcement Policy, because the violation was identified by Diablo Canyon Power Plant staff as part of the extent of

condition for a previous enforcement action, the violation has the same or similar root causes as the violation for which enforcement action was previously taken, the violation does not substantially change the safety significance or the character of the initial violation, and the violation has been corrected.

03.03 Emergency Response Facility Staffing

a. Description

The licensee identified that Emergency Plan, Revision 3.19, dated February 4, 2000, and Revision 4.01, dated June 28, 2002, reduced the effectiveness of the emergency plan by inappropriately extending emergency response facility augmentation and facility activation times. Specifically, the licensee changed the start of the response period from the time of event classification to the time the emergency response organization was informed of the need to staff facilities, and defined that an activation time of 70 minutes after the time that the response organization was informed of the need to staff facilities was acceptable to meet the 60-minute activation requirement. The changes further described that the control room had 10 minutes after declaration to initiate notification to the emergency response organization.

The licensee restored compliance with a Shift Order #22, dated February 5, 2015, which requires that notification be made to the response organization immediately upon declaration of an emergency. The licensee also issued Emergency Preparedness Bulletin 2015-03 on February 5, 2015, to inform the emergency response organization to restore the 60-minute activation requirement for emergency response facilities.

The licensee performed root cause analysis SAPN 50686760, dated August 27, 2014, to identify the root causes and appropriate corrective actions for this issue. The licensee concluded that the root cause was that the emergency plan revision process and the Licensing Basis Impact Evaluation process allowed for making conclusions about the acceptability of emergency plan changes without requiring a verification of the licensing basis. The licensee identified that CAPR's 1, 2, and 3, and CORR 1 identified in RCA 50599999, "E-Plan Non-Compliance, Section 5.16.4," dated March 18, 2014, addressed the root cause of this issue. The licensee also determined that the Human Factors Analysis and the Organizational and Programmatic Effectiveness Evaluation for RCA 50599999 applied to this issue and that no additional corrective actions were required. The licensee also performed a training performance analysis and concluded that no training activities were required to correct this issue.

b. Findings

A violation of 10 CFR 50.54(q)(4) which is not associated with classification, assessment, or protective action recommendations is normally categorized at Severity Level IV. However, the NRC has concluded that the exercise of enforcement discretion is warranted in accordance with Section 3.3 of the Enforcement Policy because the violation was identified by Diablo Canyon Power Plant staff as part of the extent of condition for a previous enforcement action, the violation has the same or similar root causes as the violation for which enforcement action was previously taken, the violation

does not substantially change the safety significance or the character of the initial violation, and the violation has been corrected.

03.04 Respiratory Protection for the Emergency Response Organization

a. Description

The licensee identified that the effectiveness of the emergency plan was reduced in November 1996 by final safety analysis report (FSAR), Revision 11, which reduced the required number of full face mask respirators with MSA Type H filters listed on Table 12.3-3 from 500 to 100, eliminated the number of required spare filter cartridges, and eliminated a requirement to store masks at access control. Specifically, Emergency Plan, Revision 3.04, dated August 30, 1984, revised the number of required full-face respirator masks from 250 to 500, and the number of required spare filters from 200 to 600. Emergency Plan, Revision 3.11, dated May 2, 1991, replaced a requirement to maintain 500 full-face mask respirators with a reference to FSAR Table 12.3-3, which contained a requirement to maintain 500 full-face mask respirators. Subsequently, in November 1996, FSAR Table 12.3-3 was revised to reduce the number of required full-face respirators from 500 to 100. The November 1996 reduction in the number of required full face respirators listed on Table 12.3-3 reduced the effectiveness of the emergency plan because the commitment to provide emergency worker respiratory protection had been relocated from the emergency plan to the FSAR. The licensee initiated SAPN 50699789 on April 28, 2015, to document the issue. The subsequent licensee investigation determined that that licensee had continuously maintained greater than 250 full-face respirator masks.

The inspectors concluded that apparent cause of this issue was that the Licensing Basis Impact Evaluation process allowed the FSAR to be changed without identifying that the change affected an emergency preparedness requirement (e.g. without requiring verification of the licensing basis). The licensee restored compliance on July 30, 2015, by revising FSAR Table 12.3-3 to restore the previous commitment to maintain 250 respirators on-site for emergency preparedness purposes.

b. Findings

A violation of 10 CFR 50.54(q)(4) which is not associated with classification, assessment, or protective action recommendations is normally categorized at Severity Level IV. However, the NRC has concluded that the exercise of enforcement discretion is warranted in accordance with Section 3.3 of the Enforcement Policy, because the violation was identified by Diablo Canyon Power Plant as part of the extent of condition for a previous enforcement action, the violation has the same or similar root causes as the violation for which enforcement action was previously taken, the violation does not substantially change the safety significance or the character of the initial violation, and the violation has been corrected.

4OA6 Meetings

Exit Meeting Summary

On December 15, 2015, the inspectors presented the results of the onsite supplemental inspection of the licensee's corrective actions for one White finding to Mr. E. Halpin, Senior Vice President and Chief Nuclear Operations Officer, and other members of the licensee staff. The licensee acknowledged the information presented. The licensee concluded that any proprietary information reviewed by the inspector had been returned or destroyed.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Vice President, Nuclear Services
B. Ashbrook, Manager, Emergency Services Performance
T. Baldwin, Director, Nuclear Site Services
D. Evans, Director, Security & Emergency Services
P. Gerfen, Director, Nuclear Operations Services
M. Ginn, Manager, Nuclear Emergency Planning
E. Halpin, Senior Vice President, Chief Nuclear Officer
H. Hamzehee, Manager, Regulatory Services
S. Kirven, Manager, Nuclear Security Operations
J. MacIntyre, Director, Equipment Reliability
M. McCoy, Senior Advising Engineer, Regulatory Services
J. Morris, Supervisor, Regulatory Services
C. Murry, Director, Nuclear Work Management
E. Nelson, Director, Nuclear Projects
J. Nimick, Station Director
L. Parker, Supervisor, Regulatory Services
A. Peck, Director, Nuclear Engineering
B. Sturtevant, Supervisor, Nuclear Quality
M. Zawalick, Manager, Compliance and Risk
A. Warwick, Supervisor, Emergency Planning
J. Welsch, Site Vice President
R. Zimkowski, Manager, Security

NRC Personnel

T. Hipschman, Senior Resident Inspector
J. Reynoso, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000275/2014502-01 05000323/2014502-01	NOV	Failure to Obtain Prior Approval for a Change Which Decreased the Effectiveness of the Emergency Plan

LIST OF DOCUMENTS REVIEWED

Section 4OA4: Supplemental Inspection (95001)

Procedures and Other Documents

Number	Title	Revisions/Date
	Diablo Canyon Power Plant Emergency Plan, Section 6, Emergency Measures	3 Change 11
	Diablo Canyon Power Plant Emergency Plan, Section 6, Emergency Measures	3 Change 12
	Diablo Canyon Power Plant Emergency Plan, Section 1, Definitions and Abbreviations	4 Change 0
	Diablo Canyon Power Plant Emergency Plan, Section 6, Emergency Measures	4 Change 5
AWP EP-004	10CFR50.54(q) Guidance	0, 1
EP EF-3	Activation and Operation of the Emergency Operations Facility	37, 38, 40
EP RB-10	Protective Action Recommendations	1, 2, 11, 16, 17, 18
EP RB-14	Core Damage Assessment Procedure	8, 9
EP G-3	Emergency Notifications of Off-Site Agencies	17, 18, 43, 44, 55, 56, 57
OM7.ID1	Problem Identification and Resolution	47
OM7.ID3	Root Cause Evaluation	42
OM10	Program Directive: Emergency Preparedness, Revision 0E	March 9, 2003
OM10.ID2	Emergency Plan Revision and Review	0, 1, 9, 9A, 10, 11, 12
TS3.ID2	Licensing Basis Impact Evaluations, Revision 39	April 30, 2014
SAPN 50656762	Root Cause Analysis: Improper Change for Ocean PAR Process, Revision 1	August 14, 2015
SAPN 50599999	Root Cause Analysis: Emergency Plan Noncompliance Section 5.16.4	March 18, 2014
SAPN 50673587	Root Cause Analysis: Control Room PAR	September 17, 2015
SAPN 50678360	Root Cause Analysis: Control Room Dose Assessment	September 17, 2015
SAPN 50686760	Root cause analysis: ERO Augmentation	September 17, 2015

Procedures and Other Documents

Number	Title	Revisions/Date
2014-117	50.54(q) Effectiveness Evaluation for EARS/MIDAS	December 15, 2014
2014-134	50.54(q) Effectiveness Evaluation for EP R-2 and EP RB-16	December 15, 2014
2014-129	50.54(q) Effectiveness Evaluation for EP RB-10, Revision 18	December 15, 2014
2014-130	50.54(q) Effectiveness Evaluation for EP G-3, Revision 57	December 15, 2014
2015-004	50.54(q) Effectiveness Evaluation for EP RB-14, Revision 9	January 28, 2015
	DCPP Event Investigation Manual, Revision 6	May 22, 2014
	Apparent Cause Evaluation Manual	February 5, 2015
LBIE-EP	Instructor Lesson Guide: Initial 50.54(Q) Qualification Training, Revision A	February 23, 2012
	Enrollment and Completion Report, Course LBIE-EP, January 1, 2012, through September 2, 2015	September 2, 2015
	Requalification Training Agenda, Course LBIE-EP	February 19, 2015
TQ1.DC28	Emergency Preparedness Training and Qualification Program, Revision 0	July 7, 2015
50656762-6	Operations Shift Orders	December 26, 2013
Bulletin 2013-17	EP Bulletin/Ops Shift Order for Ocean PAR and US Coast Guard Notification	December 26, 2013
50673587-3	Operations Standing Orders	November 21, 2014
	Charter: Emergency Plan License Basis Verification Project	October 14, 2014
	Pre-Inspection Assessment Report: Review of Ocean PAR Root Cause against NRC Inspection Procedure 95001	June 15, 20015
	Mock 95001 Inspection Evaluation	July 14, 2015
	Assessment Report: Review of the Five Emergency Preparedness Root Cause Evaluation Reports	September 6, 2015

Corrective Action Program (SAP Notifications)

50517472	50537581	50593750	50599009	50599999
50656762	50659407	50673587	50678360	50686760
50699789	50700018	50746147	59746177	50795711
50802565	50809304			