



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

May 18, 2015

LICENSEE: Pacific Gas and Electric Company

FACILITY: Diablo Canyon Power Plant, Unit Nos. 1 and 2

SUBJECT: SUMMARY OF MAY 7, 2015, TELECONFERENCE MEETING WITH PACIFIC GAS AND ELECTRIC COMPANY ON DIGITAL REPLACEMENT OF THE PROCESS PROTECTION SYSTEM PORTION OF THE REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURES ACTUATION SYSTEM AT DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2 (TAC NOS. ME7522 AND ME7523)

On May 7, 2015, a Category 1 teleconference public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Pacific Gas and Electric Company (PG&E, the licensee) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the teleconference meeting was to discuss the license amendment request (LAR) submitted by PG&E on October 26, 2011, for the Digital Replacement of the Process Protection System Portion of the Reactor Trip System and Engineered Safety Features Actuation System at Diablo Canyon Power Plant, Unit Nos. 1 and 2 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML113070457). The meeting notice and agenda dated April 23, 2015, are available at ADAMS Accession No. ML15113B278. A list of attendees is provided in Enclosure 1.

The teleconference meeting is one in a series of publicly noticed teleconference meetings to be held periodically to discuss issues associated with the NRC staff's LAR review. Preliminary issues that the NRC staff identified during the initial review, and the licensee's responses to these preliminary issues, were discussed during the teleconference meeting. The list of preliminary issues is provided in Enclosure 2.

Highlights from this meeting include the following:

- An upcoming NRC audit regarding this LAR was confirmed for the week of June 8, 2015; however, the licensee and vendor staff expressed concern at being ready for that audit given delays in the project.
- The open item summary listing was discussed and the current version is provided with this meeting summary as Enclosure 2. The NRC staff noted that it is still awaiting responses to some items that have been open for an extended period of time. The NRC staff noted that no new issues had been added to the open items list, and that no new items are able to be closed as of the date of the meeting.

- The project plan for the review of the LAR was discussed and the major upcoming milestones were confirmed. The current version is provided with this meeting summary as Enclosure 3.
- The NRC staff and the licensee agreed to wait until the audit is firmly scheduled and/or completed before scheduling the next periodic meeting.

One member of the public was in attendance for the teleconference meeting and no public meeting feedback forms were submitted.

Please direct any inquiries to the Diablo Canyon Project Manager, Siva Lingam, at 301-415-1564 or at Siva.Lingam@nrc.gov.



Andrea E. George, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:

1. List of Attendees
2. Staff Identified Issues That are Open
3. Project Plan

cc w/encls: Distribution via Listserv

LIST OF ATTENDEES
MAY 7, 2015, TELECONFERENCE MEETING WITH
PACIFIC GAS AND ELECTRIC COMPANY
DIGITAL UPGRADE FOR DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-275 AND 50-323

<u>NAME</u>	<u>ORGANIZATION</u>
K. Schrader	Pacific Gas and Electric
A. Wilson	Pacific Gas and Electric
K. Jentzsch	Pacific Gas and Electric
K. Hughes	Westinghouse
A. Breneman	Westinghouse
W. Odess-Gillet	Westinghouse
T. Tuite	Westinghouse
Rich Stattel	Nuclear Regulatory Commission (NRC)
Samir Darbali	NRC
Rossnyev Alvarado	NRC
John Thorp	NRC
Andrea George	NRC
George Adams	Southwest Research Institute (SwRI)
Dan Pomerening	SwRI
Eric Dornes	SwRI
Gordon Clefton	Nuclear Energy Institute

ENCLOSURE 2

STAFF IDENTIFIED OPEN ISSUES LISTING

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-275 AND 50-323

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
101	RJS	<p>Phase 2 Environmental Qualification Documentation:</p> <p>Per ISG 6 Section D.5.1, the NRC staff needs to review the information provided to determine if the PPS equipment has been demonstrated to be able to operate within the specified environment. In order to do this the staff needs to have plant specific environmental data for the plant and specifically for the cable spreading room. The ISG 6 matrix (item 2.12) states that this information has been provided in the two vendor topical reports, however, these reports do not contain any plant specific data.</p> <p>The NRC requires plant specific environmental condition data for normal operating conditions and the worst conditions expected during abnormal and accident conditions where the PPS equipment is expected to perform its safety function.</p> <ul style="list-style-type: none"> • Range of temperature and humidity conditions that are expected in the cable spreading room. • Seismic data for the Diablo Canyon OBE and SSE earthquakes including frequencies and acceleration values. • EMI / RFI data for areas where PPS equipment is to be installed. <p>The FRS section does specify the ranges of temp and humidity but for seismic environment, it refers to documents DCM C-17, DCM C-25, DCM C-30, DCM C-28, and DCM T-10.</p> <p>Note: The required information may also be contained in the UFSAR. The staff is reviewing design basis information in the UFSAR, however specific environmental conditions applicable to the PPS equipment remain unclear to the staff.</p> <p>3/28/14 Update: In-Equipment Response Spectra (IERS): In the seismic test report, it is stated the IERS spectra will change as a result of the equipment</p>		Open	RAI 61	4/30/14	<p>12/12/14 Hold OPEN until final qualification documents are received.</p> <p>12/11/13 – RJS Seismic Reports posted on sharepoint. Further plant specific information including ping tests of PPS cabinets is still needed for evaluation.</p> <p>11/1/13 – RJS Waiting for additional testing to be completed.</p> <p>6/26/2013: during this call the following clarifications were provided: - Describe specific conditions for the room where the system will be installed. - Is there any restrictive requirement for this room? - What is the</p>

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		<p>modifications. So far, the evaluation is based on comparing the ALS and Tricon test data (TRS) with the RRS derived from the 140' elevation spectra provided in DCM No. C-25. I think that these RRS spectra will be conservative in comparison to the IERS but I will need to confirm this once I see the revised IERS.</p> <p>See follow-up questions and answers in the PG&E response below.</p>	<p>PG&E Response: PG&E provided seismic information in the document titled "Westinghouse Seismic Test Report EQLR-224B, Rev. 1" on the Sharepoint on 12/3/13. Additional testing is required for the PPS cabinets to be used.</p> <p>3/28/14 Update:</p> <p>1) IEEE 344-1975, Section 3.5.3, states that If equipment damping is not known, a value of 5 percent is recommended. Therefore use 5% damping.</p> <p>Based on the following criteria:</p> <p>2) IEEE 344-1975, Section 6.6.3.1, states that the TRS envelops the RRS over a frequency range which includes all natural frequencies of the equipment up to 33 Hz. The guidance has been more specifically addressed in IEEE 344-1987 (Endorsed by NRC RG 1.100 Rev. 2), Section 7.6.3.1.10 that it can be shown by a resonance search that no resonance response phenomena exist below 5Hz, it is required to envelop the RRS only down to 3.5 Hz. Excitation must continue to be maintained in the 1 Hz to 3.5 Hz range to the capability of the test facility.</p> <p>3) According to Draft NTS Report No TR62987-07N-SEI, Revision 0 (Reference 8.9 of Draft TRICON v10 Nuclear Qualification Project , Seismic Test Report 9600164-526, Date 04/13/07) Section 6.8,</p>				relationship between the system specification requirement and environmental conditions?

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		<p>Resonance Survey Results shows that the ETP or Chassis has no resonance occurred below 40 Hz. The TRS did not envelop RRS below 3 Hz meet the above IEEE 344-1975 as well as IEEE 344-1987 criteria. Therefore, Tricon seismic test response are acceptable.</p> <p>Based on 2) and 3) above, it can be justified that the Tricon test report is acceptable for the qualification of PCS racks.</p> <p>The PCS racks are identical to the PPS racks and are in the same location/elevation. Since there are no natural frequencies below 5Hz, you only need to envelop down to 3.5Hz. The resonance survey showed that the natural frequencies were all greater than 40Hz. So the TRS below 3.5Hz does not matter.</p> <p>Response to follow-up questions:</p> <ul style="list-style-type: none">Will you be submitting a revised EQLR-224B with the new IERS or do you plan to submit the IERS information via some other document? <p>No, EQLR-224B is Westinghouse proprietary. We cannot revise their report. We will generate IERS at ALS mounting location to compare with TRS from the EQLR-224B. The new IERS will be documented in the DCPD seismic calculation.</p> <ul style="list-style-type: none">Also, the EQLR-224B document is specific to the ALS, so will there be a similar seismic test report for the Tricon? <p>Yes, Tricon has seismic test report for ETP and chassis per IEEE 344.</p> <ul style="list-style-type: none">Will there be a different set of IERS for ALS and Tricon or can the					

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		<p>same set of spectra be applied to both subsystems?</p> <p>Yes, the ALS and Tricon are mounted in the different PPS racks, the IERS are not the same. Since the ALS and Tricon have different seismic test reports, we will compare the TRS with the IERS separately.</p> <p>10/14/14 - The ALS Platform EQ report revision, 6002-00200, Revision 4 is on the sharepoint. This document is referenced by the PPS specific EQ report (EQ-QR-120-PGE, Revision 0, Diablo Canyon PPS Advanced Logic System and Line Sense Module Equipment Qualification Summary Report) that is also on the sharepoint.</p>					
109	RJS	<p>Audit Preparation:</p> <p>In preparation for the follow-up audits at Invensys and at Westinghouse, the staff would like to have access to the configuration status accounting documents. Can the following documents be put onto the share point site?</p> <ol style="list-style-type: none"> 1. 6116-00050, Diablo Canyon PPS Configuration Status Accounting, 2. Triconex Master Configuration List 993754-803 Rev. 41 	<p>PG&E Response: The 6116-00050, Diablo Canyon PPS Configuration Status Accounting was put on the Sharepoint on 12/3/13. The Tricon MCL will be placed on the Sharepoint to support the audit by 05/08/14.</p>	Close	No RAI		<p>5/6/15 Confirmed Rev. 2 of 6116-00050 is on sharepoint.</p> <p>3/18/15 Confirmed that both requested documents are on sharepoint.</p> <p>The ALS CSA document is old and does not have enough information on configuration in it.</p> <p>5/16/14 Could not find the MCL on share point. When will this be available to us?</p>

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							<p>4/16/14 – PG&E agreed to add current Tricon MCL to sharepoint to support pre-audit activities. MCL will also be available during Invensys audit.</p> <p>11/1/13 – RJS 6116-00050 to be put on sharepoint. Tricon doc will be made available prior to second audit.</p>
115	RJS	<p>Electro Magnetic Compatibility (Tricon):</p> <p>Section 4.14 – ASAI-6 of the LAR states that the equipment vendors are required to confirm equipment compliance with physical requirements in the DCPD FRS. These requirements include the EMC requirements from Section 3.1.6 of the FRS which states: “the PPS shall be qualified by test, analysis, or a combination thereof, to function without fault or error in an electromagnetic environment in accordance with the guidance of Regulatory Guide 1.180.”</p> <p>In contrast to this, the Tricon V10 safety evaluation determined that the Tricon V10 PLC system did not fully meet the guidance of RG 1.180, Revision 1, for conducted or radiated emissions or susceptibility. As a result, the SE states: “before using the Tricon V10 system equipment in SR systems in a nuclear power plant, licensees must determine that the plant-specific EMI requirements are enveloped by the capabilities of the Tricon V10 system as approved in this SE.”</p>		Open	RAI 71		<p>3/12/15 Request schedule for submittal of supplemental information.</p> <p>4/16/14 - RAI will be required.</p>

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		<p>To complete its safety evaluation, the NRC requires the licensee to provide documentation to show the DCPP specific EMI requirements to be enveloped by the Tricon V10 test levels achieved and documented in the Tricon V10 safety evaluation.</p> <p>PG&E Response: Additional electromagnetic environment testing has been performed for the Tricon that improve meeting the RG 1.180 guidance. Information on the additional testing and evaluation to the PG&E requirements will be submitted. Determination of the submittal date is in progress.</p>					
119	sd	<p>(Audit Item) IOM is using laptops, one per Protection Set plus one backup, each with TriStation 1131 installed, to develop the V10 Tricon protection set application code for the DCPP PPS Replacement project. PG&E bought these 5 development laptops and IOM will be delivering them to PG&E as part of the Tricon product delivery. However, during the Invensys audit on June 3-5, 2014, PG&E informed the staff that it does not plan to use these laptops, and only plans use the TriStation installed on the MWS's. Please clarify what PG&E will do with the 5 development laptops once they are delivered to them. Also, please clarify what controls will be placed on the TriStation software installed on these laptop computers.</p> <p>PG&E Response: The PG&E laptops provided for development for the V10 Tricon were not designated as safety related and will not be used by PG&E in the future because they are obsolete.</p>		Close	RAI 72		3/19/15 Hold in OI list until RAI is sent.
129	RA	<p>ALS Topical Report Addendum:</p> <p>The ALS topical report addendum identifies changes in Category 4 as those modifications that are applicable to the approved ALS topical report.</p>		Open	RAI 73		<p>Hold Open for RAI letter.</p> <p>12/10/14 –The ALS</p>

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		Please describe how these changes affect the DC PPS replacement, in particular description and functionality of the Halt mode.					addendum is being withdrawn. However, PG&E provided clarifications about the HALT mode for the ALS system. Therefore, a RAI is necessary.
		PG&E Response: Additional information provided by licensee in separate document dated 12/11/14.					
135	RA	ALS Project Organization The Management Plan (6116-00000, Rev. 6) defines the project organization for the DC PPS replacement project. However this plan does not define the role and responsibilities for the PPS Product Manager. This team member is identified in Section 4.1.1 of the Management Plan, as well as in Section 2.1 of the Software Safety Plan (6116-10020). Please describe the roles and responsibilities for the PPS Product Manager, and his interface/relationship with the Project Manager		Open			3/1/15: A new revision of the Management Plan will address this
		PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7).					
136	RA	ALS Management Plan The Management Plan (6116-00000, Rev. 6), Section 4.1.2, states ALS personnel required support from Global Instrumentation and Control Production (GICP) to complete the project. Can you please provide information about the support provided by GICP?		Open			3/1/15: A new revision of the Management Plan will address this
		PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7).					

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137	RA	ALS Management Plan The Management Plan (6116-00000, Rev. 6), Section 6.16, describes NA 4.51"Fiel Programmable Gate Array Development Procedure" as the procedure used for software development. Can you please provide a copy of this procedure in the Sharepoint? PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7).		Open			3/1/15: A new revision of the Management Plan will address this
138	RA	ALS Configuration Management Plan The Management Plan (6002-00002, Rev. 10), Sections 1.2.5 and 2.1, states the ALS Project Management Plan will identify the configuration management organizational structure. However, the ALS Project Management Plan does not provide this information. Furthermore, Section 2.2 of the Configuration Management Plan describes allocation for configuration management activities, but the Project Management Plan does not define how this is applied to the DC PPS project. PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7) that will contain an updated Section to address the project specific portions of the ALS Configuration Management Plan (6002-00002).		Open			3/1/15: A new revision of the Management Plan and the Configuration Management Plan will address this. This is SE reference 72
140	RA	ALS Configuration Management Plan Section 3.1.1 refers to a Document Index (DI). This document is not identified or described in the ALS Management Plan. Please describe how the DI is used in conjunction with the configuration items and the Configuration Status Accounting. PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7) that will contain an updated Section to address the project specific portions of the ALS Configuration Management Plan (6002-00002).		Open			3/1/15: A new revision of the Configuration Management Plan will address this This is SE reference 72

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141	RA	<p>ALS Configuration Management Plan</p> <p>Section 3.2.5 described the use of REC to manage requirement changes to CIs. Please explain the relationship of the REC and the OnTime ticket process.</p> <p>PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7) that will contain an updated Section to address the project specific portions of the ALS Configuration Management Plan (6002-00002).</p>		Open			3/1/15: A new revision of the Configuration Management Plan will address this, This is SE reference 72
142	RA	<p>ALS Configuration Management Plan</p> <p>Section 3.2.5 states that the control points for release of Level A, B and C are described in Section 3.2.2, but the section referenced does not provide that information. Please clarify when these points are released</p> <p>PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7) that will contain an updated Section to address the project specific portions of the ALS Configuration Management Plan (6002-00002).</p>		Open			3/1/15: A new revision of the Configuration Management Plan will address this. This is SE reference 72
143	RA	<p>ALS Configuration Management Plan</p> <p>Section 3.6 describes control of subcontractors and vendors. This section refers to the ALS management plan for further description of integration and sightseeing of activities conducted by subcontractors and vendors. However, the Management Plan does not provide any information about control of subcontractors and vendors.</p> <p>Furthermore, Section 4.1.2 identifies Global Instrumentation and Control Production as a provider for this project. This section does not describe how WEC will manage and integrate the work performed by GICP.</p> <p>Please provide this information.</p> <p>PG&E Response: This will be addressed by an update to 6116-00000 (new Revision 7) that will contain an updated Section to address the project specific portions of the ALS Configuration Management Plan (6002-00002).</p>		Open			3/1/15: A new revision of the Configuration Management Plan will address this. This is SE reference 72

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144	Rjs/ga	<p>Environmental qualification: EMI/RFI</p> <p>Clarify if CD-ER 993754-30 demonstrates Triconex components comply with RG 1.180 conducted emissions levels for CE101 and CE102 testing.</p> <p>Basis:</p> <p>Project Traceability Matrix (Document No. 993754-1-804) Item 445 identifies CD-ER 993754-30 with regard to 120VAC power module exceeding allowable levels specified in RG 1.180. This line item refers to qualified AC power line filters provided.</p>		Open			Added OI on 3/18/15
		PG&E Response: In progress.					
145	RA	<p><u>Remaining Document Submittals</u></p> <p>Next Supplement: (to include)</p> <ul style="list-style-type: none"> • Removal of Printers from system • Response to ALS ASAI's • T.S. Implementation Commitment <p>PG&E Documents:</p> <p>DCPP Seismic Calculation / IERS (See OI 101)</p> <p>ALS Documents:</p> <p>The following documents were identified in ISG-06 matrix as part of Phases 1 and 2 submittals for the Diablo Canyon LAR. Several of these documents have been submitted but have been superseded. Please</p>					Added OI on 3/18/15

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		<p>docket the latest revision of the following documents:</p> <p>6116-10020, "Diablo Canyon PPS Software Safety Plan"</p> <p>6116-00003, "Diablo Canyon PPS VV Plan" (Ref. 91)</p> <p>6116-00000, "Diablo Canyon Management Plan" (Ref. 72)</p> <p>6116-00005, "Diablo Canyon PPS System Test Plan" (Ref. 93)</p> <p>6116-70140, "PPS ALS Test Design Specification" (NR)</p> <p>6116-10216, "Diablo Canyon PPS VV Simulation Environment Specification" (Ref. 205) DCL-15-009</p> <p>6116-70140, "PPS ALS Test Design Specification" (NR)</p> <p>6116-00100, "TxB1 and TxB2 Communications Protocol Specification" (NR)</p> <p>6116-00054, "Diablo Canyon PPS ISG04 Matrix" (NR)</p> <p>ALS Platform Documents</p> <p>6002-00002, "ALS Configuration Management Plan" (Ref. 70)</p> <p>6002-00006, "ALS Security Plan" Rev. 3 (Rev. 1 is docketed ML13036A380) (Samir to make call.)</p> <p>6002-00030, "ALS Design Tools" Rev. 12 (Ref. 150 Rev. 9)</p> <p>Tricon Documents:</p> <p>993754-11-854-1 Revision 1 Protection Set I Factory Acceptance Report (filled out test paperwork does not need to be included)</p> <p>993754-11-854-0 Revision 1 Protection Set I HVT Report</p> <p>993754-11-861 Revision 2 VnV Design Phase Summary Report PPS I</p> <p>993754-11-862 Revision 1 VnV Implementation Phase Summary Report PPS I</p>					

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		993754-12-818 Revision 0 Protection Set II System Time Response Confirmation Report 993754-12-854-0 Revision 0 Protection Set II HVT Report 993754-12-854-1 Revision 0 Protection Set II Factory Acceptance Report 993754-12-862 Revision 0 VnV Implementation Phase Summary Report PPS II-IV 993754-13-818 Revision 0 Protection Set III System Time Response Confirmation Report 993754-13-854-0 Revision 0 Protection Set III HVT Report 993754-13-854-1 Revision 0 Protection Set III Factory Acceptance Report 993754-14-818 Revision 0 Protection Set IV System Time Response Confirmation Report 993754-14-854-0 Revision 0 Protection Set IV HVT Report 993754-14-854-1 Revision 0 Protection Set IV Factory Acceptance Report 993754-1-915 Revision 9 Safety Analysis PG&E Response: The ALS documents have been uploaded to the Share Point Site and will all be docketed, except for the NA 4.50 and NA 4.51 procedures which are quality assurance procedures that are part of the Westinghouse Quality Management System (QMS) and can be made available for audit purposes. (Staff agrees that these two documents can be removed from docketing list)					
146	Rjs/ga	Environmental Qualification: In the response to OI 94 (ASAI-04), PG&E referred to document 6116-00204, Revision 1, "ALS Subsystem Equipment Qualification Evaluation." The NRC staff needs to review this document. Please place on sharepoint or provide on docket. PG&E Response: 6116-00204-R1 was placed on the Sharepoint site in the ALS directory on 4/14/15.		Open			Added on 4/8/15

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
147	Rjs/ga	<p>Environmental Qualification: Temperature and Humidity</p> <p>Clarify if FRS Section 3.1.4.1 specifies the temperature and relative humidity worst case conditions expected in the cable spreading room (i.e., mild environment) for normal, abnormal, and accident conditions. Has an evaluation been performed for the plant-specific configuration of Tricon and ALS components to determine:</p> <ul style="list-style-type: none"> a. Maximum temperature rise in each cabinet, b. Maximum ambient temperature in the cable spreading room, and c. Design basis temperature margin has not been affected? <p>Provide DCM T-20, Environmental Qualification including Appendix A titled "Environmental Conditions for EQ of Electric Equipment." This reference is cited in Section 3.11.2.1 of the UFSAR under Accident Environments. This reference is cited in Section 3.11.2.1 of the UFSAR under Accident Environments</p> <p>PG&E Response. DCM T-20 has been put on the sharepoint site in the DCM directory. It lists CSR Normal Operation humidity level range as 20% to 90% on page 31 in Table A4.2-1. It also seems to list the same area humidity range as 0% to 95% on page 32 and this includes a note identifying a basis for this range and states it is an abnormal, non-condensing relative humidity specification.</p>		Open			Added on 4/8/15

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
148	Rjs/ga	<p>Environmental Qualification: EMI/RFI</p> <ol style="list-style-type: none"> 1. Clarify if EMI/RFI levels in the cable spreading room are within the tested operating envelopes for Tricon and ALS components. Was the plant-specific electromagnetic environment confirmed to be similar to that identified in EPRI TR-102323? Note: This is a follow-up to OI 101 which also asks for plant specific environmental conditions. 2. Clarify how EMC requirements are met with regard to power sources including those cases where the plant-specific system differs from the Tricon and ALS tested subsystems. <ol style="list-style-type: none"> a. Clarify how the PPS AC and DC power sources are deployed to accomplish the isolation features that can affect EMI/RFI test results. b. Clarify how the PPS AC and DC power sources have been qualified for EMC. c. Clarify how the installation limitation for the safety power supply is met as described in Section 7.2 of the ALS Platform EQ Summary Report. 3. Identify the qualification test documentation for the rack power supplies specified in Section 4.6.3 of the LAR (Ancillary Safety-Related Equipment Utilized in the PPS Replacement Project) to show testing was done in accordance with EPRI TR-107330 and RG 1.180. 4. For the ALS subsystem components, identify the LAR section and supporting documentation that explains how the plant design basis criteria for PPS power quality are maintained to meet the requirements for exemption to CE101 testing. 		Open			Added on 4/8/15

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		PG&E Response. In Progress.					
149	Rjs/ga	Environmental Qualification: Seismic 1. Provide the response spectra for Attachments C and H to DCM C-17 a. The contents for Attachment H to DCM C-17 reference several response spectra that are not included in the document. In particular, horizontal and torsional spectra are identified in the contents of the document but were not actually shown as figures in the document. b. DCM C-17 also includes ground response spectra for the Auxiliary Building in Attachment C. 2. Provide supporting documentation to show how the DCM C-17 and DCM C-25 node-specific floor response spectra were used to develop the IERS for both Tricon and ALS subsystems. For the ALS subsystem, provide SAP No 9000040848-000-00 (Legacy Calc No. IS-022B) which is referenced in the Review of EQLR-224B. a. DCM C-25 provides node-specific response spectra for Node #2 at the 140' elevation b. DCM C-17 provides node-specific response spectra in attachment H at the 128' and 140' elevations c. The review of EQLR-224B, Revision 1 shows IERS for the OBEA/SSEA and OBEB/SSEB versus the RRS for the ALS subsystem. d. No documentation was found showing the development of the IERS from the node –specific floor response spectra. 3. Provide DCM T-24 for the seismic qualification of plant instrumentation and controls. DCM T-24 is referenced by DCM T-		Open			Added on 4/8/15

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		<p>10 is identified in FRS Section 3.1.5.2. Clarify what category the ALS and Tricon subsystems fall under in DCM T-24 and how they meet the specific seismic qualification requirements in DCM T-24.</p> <p>4. Provide documentation to clarify what Phase A and Phase B RRS are representing for the ALS subsystem. From the information we have reviewed, it is not clear how Figures 5-1 and 5-2 in the ALS EQ Plan were developed. For example, were they developed from the information in DCM C-17 and DCM C-25 or were they developed from some other basis?</p> <p>5. Clarify the following information from the Seismic Test Report (Document No. 9600164-526) because this report only provides a discussion of results.</p> <ul style="list-style-type: none"> a. Provide comparison plots of the TRS and RRS to show the RRS levels were enveloped. b. Clarify the resonance search results. The executive summary states that there were no resonances below 100 Hz. Section 7.3 states that there was amplification between 20 and 70 Hz up to about 20 times. c. Provide data to show statistical independence and stationarity of seismic time histories. d. Reference 9.14 of the Tricon Seismic Test Report may contain this information (National Technical Systems Test Report No. TR62987-07N-SEI, "Test Report for Seismic Qualification of TRICON v 10 Nuclear Qualification Project TRICON-Under-Test," Rev. 0) 					

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		<p>PG&E Response: Part 1. PG&E previously provided the applicable Auxiliary Building horizontal and torsional spectra at the 115 foot and 140 foot locations that bound the location of the PPS Replacement equipment on the Sharepoint site in the "Spectra" subdirectory in the NRC directory on 02/12/14 as part of the response to Open Item 101.</p> <p>Requested following spectra be added to shared drive for SWRI access.</p> <p>Aux Bldg. E-W Horizontal 115ft. Aux Bldg N-S Horizontal 115ft. Aux Bldg. Torsional 115ft. Aux Bldg. E-W Horizontal 140ft. Aux Bldg N-S Horizontal 140ft. Aux Bldg. Torsional 140ft.</p> <p>Part 2. In progress.</p> <p>Part 3. DCM T-24 has been put on the sharepoint site in the DCM directory.</p> <p>Part 4. SSE-A was developed in LTR-EQ-12-23 (and was derived from previous Eagle 21 seismic levels. Several limitations to the seismic spectra are noted in the letter, with the understanding that Diablo Canyon had the responsibility to confirm the final levels that are applicable to the ALS installation in their PGE cabinets.</p> <p>SSE-B was developed in EQ-EV-48 and was designed to envelop all locations within a Corry cabinet under representative loading. These levels were originally developed for Common Q generic applications, specifically for the HSL modems, and were therefore decided to be applied to generic</p>					

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		ALS applications. Part 5. In progress.					
150	Rjs/ga	Environmental Qualification: Radiation Clarify if the mild environment within the Auxiliary Building Cable Spreading Room specified in FRS Section 3.1.4 meets the requirements of EPRI TR 107330 Section 4.3.6.1D and 4.3.6.2D for Radiation. Section 3.1.4 states, "N/A (mild environment)" Provide justification for excluding radiation testing for ALS and Tricon components. PG&E Response. Licensee provided sharepoint access to Generic I&C design specification documents DCM T-20 and DCM T-24. T-20 lists Cable Spreading Room radiation levels at 176 rad. T-24 states that CSR radiation levels are under 0.5×10^{-3} .		Open			Added on 4/8/15

ENCLOSURE 3

PROJECT PLAN

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-275 AND 50-323

Project Plan for Diablo Canyon Replacement of Digital RPS and ESFAS
(PPS) - LAR Review

Step	Planned Date	Task	Actual Date
1	Oct. 26, 2011	PG&E LAR Submittal for NRC approval. Submittal includes all Phase 1 documents needed to be docketed prior to acceptance for review per ISG-06, "Digital Licensing."	Oct. 26, 2011
2	Jan. 12, 2012	Acceptance Review complete. LAR accepted for detailed technical review. Several issues identified that could present challenges for the staff to complete its review. Scheduled public meeting with PG&E to discuss the results of the acceptance review.	Jan. 12, 2012
3	Jan. 13, 2012	Acceptance letter sent to licensee.	Jan. 13, 2012
4	Jan. 18, 2012	Conduct Public Meeting to discuss staff's findings during the LAR acceptance review. Staff proceeds with LAR technical review.	Jan. 18, 2012
5	March 18, 2012	PG&E provides information requested in acceptance letter. Initiate bi-weekly telecoms with PG&E and its contractors to discuss potential RAI issues. Open Items spreadsheet will be maintained by NRC to document staff issues and planned licensee responses.	April 2, 2012
6	May 30, 2012	PG&E provides partial set of Phase 2 documentation per commitments made in LAR. <i>*PG&E provided a subset of the Phase 2 documents on June 6th See step 14 which is a milestone for submittal of all remaining Phase 2 documents.</i>	June 6, 2012*
7	July 2012	First RAI sent to PG&E on Phase 1 documentation (e.g., specifications, plans, and equipment qualification). Continue review of the application. Request 45 day response. (ML12208A364)	August 7, 2012
8	June 2012	SER for Tricon V10 Platform issued final. This platform becomes a Tier 1 review of the LAR. (ML12146A010)	May 15, 2012
8.1	June 2013	SER for Westinghouse ALS Platform issued final. This platform becomes a Tier 1 review of the LAR.	
9	September 2012	Receive answers to first RAI. (ML12256A308)	Sept. 11, 2012
10	November 2012	Audit trip to Invensys facility for thread audit; audit the life cycle planning documents and outputs, with particular emphases on verification and validation, configuration management, quality Assurance, software safety, the Invensys application software development procedures, and application software program design.	Nov. 13-16, 2012
10.1	December 2012	Audit report provided to PG&E.	February 21, 2013
11	February 2013	Audit trip to Westinghouse/CSI facility for thread audit; audit the life cycle planning documents and outputs, with	February 21, 2013

Project Plan for Diablo Canyon Replacement of Digital RPS and ESFAS

(PPS) - LAR Review

		particular emphases on verification and validation, configuration management, quality Assurance, software safety, the W/ALS application software development procedures, and PPS ALS application software program design.	
11.1	April 2013	Audit report provided to PG&E and its contractor.	April 11, 2013
12	March 2013	Second RAI Letter to PG&E on Phase 1 documentation	March 20, 2013
12.1	April 2013	Receive responses to Second set of RAI's	May 9, 2013
13	April 2013	LAR revision and all supporting documentation associated with the change in ALS and Tricon V10 workstation designs for the PPS are submitted.	April 30, 2013
14	August 2013	NSIR Cyber Security audit at Diablo Canyon site.	August 8, 2013
14.1	February 2014	Cyber Security Audit Report provided to licensee EICB Letter sent to PM 9/2/13 - ML13242A078 NSIR Report - ML13339A428, ML13339A438 and ML13339A442	April 28, 2014
15	See Revised Document Submittal Schedules	PG&E provides remaining set of Phase 2 documentation per commitments made in LAR. To include ALS PSAI related documents. See step 6 for initial submittal of Phase 2 documents.	
16	See Revised Document Submittal Schedules	All Documentation for DCPD W/CSI ALS and IOM/Triconex V10 processors applicable to the DCPD PPS LAR are submitted.	
17	June 2014	Follow-up audit trip to Invensys facility for thread audit; audit the life cycle planning documents and outputs, with particular emphases on verification and validation, configuration management, quality assurance, software safety, the Invensys application software development procedures, and application software program design.	June 13, 2014
17.1	July 2014	Second Invensys audit report provided to PG&E. Report sent to DORL 8/14. ML14216A398 Final report 4/30/15. ML15103A011/ML15103A010	April 30, 2015
18	February 2014	Third RAI Letter to PG&E on Phase 2 documentation (e.g., FMEA, safety analysis, RTM, EQ test results, setpoint calculations.) ML14055A058	February 27, 2014

**Project Plan for Diablo Canyon Replacement of Digital RPS and ESFAS
(PPS) - LAR Review**

18.1	April 2014	Receive responses to third set of RAI's. DCL-14-036 - ML14121A002	April 30, 2014
19	June 2015	Audit trip to W/ALS facilities for additional thread audit items; audit hardware and software installation plans, configuration management reports, detailed system and hardware design, completed test procedures, V&V activities, summary test results (including FAT) and incident reports, and application code listings. Audit Plan - ML15090A716	
19.1	July 2015	Audit report provided to PG&E.	
22	February 18 / March 2014	Presentation to ACRS Subcommittee/Full ACRS Committee on DCPD PPS LAR Safety Evaluation.	February 18; March 6, 2014
22.1	February 10, 2016	Presentation to ACRS Subcommittee/Full ACRS Committee on DCPD PPS LAR Safety Evaluation.	
23	September 2015	Complete draft technical SER for management review and approval.	
24	September 2015	Issue completed draft technical SER to DORL	
25	November 2015	Draft SER sent it to PG&E, Invensys, and W/CSI to perform technical review and ensure no proprietary information was included.	
26	December 2015	Receive comments from PG&E and its contractors on draft SER proprietary review.	
27	March 2016	Approved License Amendment issued to PG&E	
28	TBD	Inspection trip to DCPD for PPS Site Acceptance Testing (SAT), training and other preparation for installing the new system. To be coordinated with regional visit.	
29	TBD	Inspection trip to DCPD for PPS installation tests, training and other system installation activities for the new system. To be coordinated with region visit.	

- The project plan for the review of the LAR was discussed and the major upcoming milestones were confirmed. The current version is provided with this meeting summary as Enclosure 3.
- The NRC staff and the licensee agreed to wait until the audit is firmly scheduled and/or completed before scheduling the next periodic meeting.

One member of the public was in attendance for the teleconference meeting and no public meeting feedback forms were submitted.

Please direct any inquiries to the Diablo Canyon Project Manager, Siva Lingam, at 301-415-1564 or at Siva.Lingam@nrc.gov.

/RA/

Andrea E. George, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:

1. List of Attendees
2. Staff Identified Issues That are Open
3. Project Plan

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ADAMS Accession Nos. Meeting Notice ML15113B278; Meeting Summary ML15134A257 *via email

OFFICE	NRR/DORL/LPL4-1/PM	NRR/DORL/LPL4-1/PM	NRR/DORL/LPL4-1/LA
NAME	AGeorge	SLingam	JBurkhardt*
DATE	5/14/15	5/14/15	5/14/15
OFFICE	NRR/DE/EICB	NRR/DORL/LPL4-1/BC	NRR/DORL/LPL4-1/PM
NAME	JThorp (DRahn for)	MMarkley	AGeorge
DATE	5/18/15	5/18/15	5/18/15

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