



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

February 29, 2012

LICENSEE: Pacific Gas and Electric Company

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

SUBJECT: SUMMARY OF FEBRUARY 23, 2012, PHONE CALL 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 (TAC NOS. ME7522 AND ME7523)

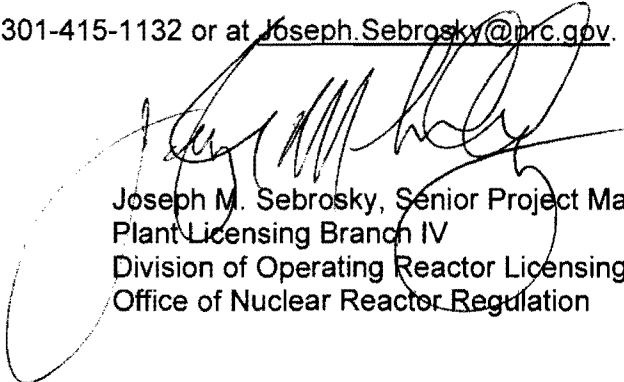
On February 23, 2012, the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Pacific Gas and Electric Company (PG&E, the licensee) had a phone call to discuss the license amendment request (LAR) submitted by PG&E on October 26, 2011, for the Digital Replacement of the Process Protection System (PPS) 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). A list of attendees is provided in Enclosure 1.

The purpose of the phone call was to address preliminary questions that the NRC staff had associated with the review. Prior to the phone call, a list of issues was provided to the licensee. The licensee provided high-level responses to these issues. The issues and the licensee's responses are provided in Enclosure 2. The first nine issues are the issues that were identified in the January 13, 2012, acceptance review letter of the PPS LAR (ADAMS Accession No. ML120120005). As appropriate, the staff will issue requests for additional information based on interactions with the licensee.

The NRC staff indicated that it intends to have phone calls every 2 weeks with the licensee to discuss issues and the status of the review. These future phone calls will be noticed as public meetings. The staff expects that these phone calls will be held for the next several months. The issues found in Enclosure 2 will be updated to reflect the status of the staff's review and will serve as the agenda for these publicly noticed phone calls. This process is similar to the process that was followed for the Watts Bar Unit 2 digital instrumentation and control review.

During the phone call, the licensee asked if the NRC staff had updated the matrix associated with DI&C-ISG-06, "Task Working Group #6: Licensing Process, Interim Staff Guidance, Revision 1," dated January 19, 2011 (ADAMS Accession No. ML110140103). The staff indicated that it had updated the matrix as it applies to the Diablo Canyon PPS review. The licensee requested a copy of the draft matrix that the staff was using. Subsequent to the phone call, the staff provided Enclosure 3 to the licensee. Enclosure 3 is a spreadsheet with 61 rows and 25 columns. Because of the number of columns, not all of the columns could fit on one sheet of paper. Enclosure 3 splits the matrix into three parts, with new columns beginning on pages 1, 10, and 23. The row number to the far left of the document provides a reference that can be used to align the different portions of the matrix.

Please direct any inquiries to me at 301-415-1132 or at Joseph.Sebrosky@nrc.gov.



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Plant Licensing Branch IV
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
3. DI&C-ISG-06 review matrix for Diablo Canyon

cc w/encls: Distribution via Listserv

LIST OF ATTENDEES

FEBRUARY 23, 2012, PHONE CALL WITH

PACIFIC GAS AND ELECTRIC COMPANY REGARDING

DIABLO CANYON POWER PLANT DIGITAL UPGRADE

<u>NAME</u>	<u>ORGANIZATION</u>
Ken Schrader	Pacific Gas and Electric
Bob Lint	Altran
John Hefler	Altran
Bill Petrick	Altran
Edward Quinn	Altran
G. Clarkson	Altran
K. Brandt	Altran
J. Basso	Westinghouse
Warren Odess-Gillett	Westinghouse
Roman Shaffer	Invensys
Joe Sebrosky	U.S. Nuclear Regulatory Commission
Bill Kemper	U.S. Nuclear Regulatory Commission
Rich Stattel	U.S. Nuclear Regulatory Commission
Bernard Dittman	U.S. Nuclear Regulatory Commission

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
001	AR (BD)	<p>[ISG-06 Enclosure B, Item 1.3] <u>Deterministic Nature of Software:</u> The Diablo Canyon Specific Application should identify the board access sequence and provide corresponding analysis associated with digital response time performance. This analysis should be of sufficient detail to enable the NRC staff to determine that the logic-cycle;</p> <ul style="list-style-type: none"> a. has been implemented in conformance with the ALS Topical Report design basis, b. is deterministic, and c. the response time is derived from plant safety analysis performance requirements and in full consideration of communication errors that have been observed during equipment qualification. <p>As stated in the LAR, information pertaining to response time performance will be submitted as a Phase 2 document. Please ensure this matter is addressed accordingly.</p>	<p>P&GE response: ALS Diablo Canyon PPS document 6116-00011, "ALS System Design Specification", Section 7.5, identifies the ALS board access sequence and provides an analysis associated with digital response time performance.</p> <ul style="list-style-type: none"> a) The Diablo Canyon PPS ALS system is configured in accordance with the qualification requirements of the ALS platform topical report, b) The analysis in Diablo Canyon PPS document 6116-00011, "ALS System Design Specification", Section 7, describes a logic cycle that is deterministic. c) The requirements for the response time of the PPS processing instrumentation (from input conditioner to conditioned output signal) is specified as not to exceed 0.409 seconds in Section 3.2.1.10 of the "Diablo 	Open	N/A		

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		<p>Canyon Power Plant Units 1 & 2 Process Protection System Replacement Functional Requirements Specification (FRS)", Revision 4 submitted as Attachment 7 of the LAR. In Section 1.5.8 of the "Diablo Canyon Power Plant Units 1 & 2 Process Protection System Replacement Interface Requirements Specification (IRS)", Revision 4, submitted as Attachment 8 of the LAR, the 0.409 seconds PPS processing instrumentation response time is allocated between the ALS and Tricon as follows:</p> <p>ALS: 175 ms for RTD processing Tricon: 200 ms Contingency: 34 ms</p> <p>The 0.409 seconds PPS processing instrumentation value is the same as the value that is currently allocated to PPS processing instrumentation. As long as the 0.409 second PPS processing instrumentation value is not exceeded, the total response time values assumed in the plant safety analyses contained in FSAR Table 15.1-2 will not be exceeded; 7 seconds for Overtemperature ΔT RT and Overpower ΔT RT functions, 2 seconds for High pressurizer pressure RT, Low pressurizer pressure RT, and Low Low SG water level RT functions, 1 second for Low reactor coolant flow RT function, 25 seconds for Low pressurizer pressure, High containment pressure, and Low steam line pressure Safety Injection initiation, 60 seconds for Low low SG water level auxiliary feedwater initiation, 18 seconds for High containment pressure, Low pressurizer pressure, and Low steam line pressure Phase A containment isolation, 48.5 seconds for High High containment pressure containment spray initiation, 7 seconds for High High containment pressure steam line isolation, 66 seconds for High High SG water level auxiliary feedwater isolation, and 8 seconds for Low steam line pressure steam line isolation.</p> <p>The ALS response time will be verified as part of the FAT and the results will be included in the FAT summary report to be submitted by 12/31/12.</p>					

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		<p>Tricon Invensys provided detailed information on the deterministic operation of the V10 Tricon in Invensys Letter No. NRC V10-11-001, dated January 5, 2011. In support of the V10 Tricon safety evaluation, Invensys submitted document 9600164-731, Maximum Response Time Calculations, describing the worst-case response time for the V10 Tricon Qualification System. Included in document 9600164-731 are the standard equations for calculating worst-case response time of a given V10 Tricon configuration. The Design Phase calculations for the V10 Tricon PPS Replacement architecture will be available for audit, and the System Response Time Confirmation Report, 993754-1-818, will be submitted to the staff as part of the ISG-06 Phase 2 submittals at the completion of factory acceptance testing of the V10 Tricon PPS Replacement.</p> <p>The Tricon response time will be verified as part of the FAT and the results will be included in the FAT summary report to be submitted by 12/31/12.</p>					
002	AR (RA)	<p>[ISG-06 Enclosure B, Item 1.4] <u>Software Management Plan</u>: Regulatory Guide (RG) 1.168, Revision 1, "Verification, Validation, Reviews and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," dated February 2004 endorses IEEE (Institute of Electrical and Electronics Engineers) 1012-1998, "IEEE Standard for Software Verification and Validation," and IEEE 1028-1997, "IEEE Standard for Software Reviews and Audits," with the exceptions stated in the Regulatory Position of RG 1.168. RG 1.168 describes a method acceptable to the NRC staff for complying with parts of the NRC's regulations for promoting high functional reliability and design quality in software used in safety systems. Standard Review Plan(SRP) Table 7-1 and Appendix 7.1-A identify Regulatory Guide 1.168 as SRP acceptance criteria for reactor trip systems (RTS) and for engineered safety features</p> <p>Westinghouse/ALS 6116-00000 Diablo Canyon PPS Management Plan,</p>		Open	N/A		

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		Figure 2-2, shows the Verification and Validation (V&V) organization reporting to the Project Manager. This is inconsistent with the information described in the ALS Management Plan for the generic system platform, where the V&V organization is independent form the Project Manager. This is also inconsistent with the criteria of RG 1.168 and will need to be reconciled during the LAR and ALS LTR reviews.					
		P&GE response: ALS The Westinghouse/ALS 6116-00000 Diablo Canyon PPS Management Plan will be updated to address identified issues and PG&E will submit the revised document by TBD.					
3	AR (RA)	[ISG-06 Enclosure B, Item 1.9] <u>Software V&V Plan:</u> The ALS V&V plan states that Project Manager of the supplier is responsible for providing directions during implementation of V&V activities. Also, the organization chart in the Diablo Canyon PPS Management Plan shows the IVV manager reporting to the PM. The ALS V&V plan described in ISG6 matrix for the ALS platform and the Diablo Canyon PPS Management Plan do not provide sufficient information about the activities to be performed during V&V. For example, the ALS V&V Plan states that for project specific systems, V&V activities are determined on a project by project basis and are described in the project Management Plan, in this case, 6116-00000, "Diablo Canyon PPS Management Plan." However, the 6116-00000 Diablo Canyon PPS Management Plan states: "See the ALS V&V Plan for more information and the interface between the		Open	N/A		

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		<p>IV&V team and the PPS Replacement project team.”</p> <p>The Triconex V&V plan states that the Engineering Project Plan defines the scope for V&V activities. As mentioned before, the Triconex EPP is not listed in the ISG6 matrix.</p> <p>These items will need further clarification during the LAR review to demonstrate compliance with Regulatory Guide (RG) 1.168, Revision 1, “Verification, Validation, Reviews and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants,”</p>	<p>P&GE response:</p> <p>ALS CS Innovations submitted a revised V&V plan, “6002-00003 ALS Verification and Validation Plan”, Revision 5, on November 11, 2011, that revises the V&V responsibilities to address the above issue. The Westinghouse/ALS 6116-00000 Diablo Canyon PPS Management Plan will be updated to address identified issues and PG&E will submit the revised document by TBD.</p> <p>Tricon The organizational structure of Invensys Operations Management comprises, in part, Engineering and Nuclear Delivery. Each of these organizations plays a specific role in the V10 Tricon application project life cycle. Invensys Engineering is responsible for designing and maintaining the V10 Tricon platform, and Nuclear Delivery is responsible for working with nuclear customers on safety-related V10 Tricon system integration projects. Invensys Engineering department procedures require “Engineering Project</p>				

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		<p>Plans (EPP)," whereas Nuclear Delivery department procedures require "Project Plans." Invensys Engineering is not directly involved in system integration, but Nuclear Delivery may consult with Engineering on technical issues related to the V10 Tricon platform.</p> <p>The NRC applied ISG-06 to the V10 Tricon safety evaluation. Invensys submitted a number of documents pertaining to the design of the V10 Tricon platform as well as process and procedure documents governing Invensys Engineering activities, including the EPP. In most cases, these platform-related documents are preceded with document number 9600164. The platform-level documents reviewed by the staff during the V10 Tricon safety evaluation will not be resubmitted by Nuclear Delivery during application-specific system integration projects.</p> <p>In support of the PG&E LAR for the DCCP PPS Replacement, Invensys Nuclear Delivery is required to submit the application design documents as defined in ISG-06. These project documents are preceded by document number 993754. The Phase 1 submittal under Invensys Project Letter 993754-026T, dated October 26, 2011, contained, in part, the following:</p> <p>PPS Replacement Project Management Plan (PMP), 993754-1-905. "Project Management Plan" was used to more closely match BTP 7-14 with regard to "management plans"; and</p> <p>PPS Replacement Software Verification and Validation Plan (SVVP), 993754-1-802.</p> <p>The PMP describes the PPS Replacement Project management activities within the Invensys scope of supply. The guidance documents BTP 7-14 and NUREG/CR-6101 were used as input during development of the PMP.</p>					

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		With regard to compliance with RG 1.168, the PPS Replacement PMP and SVVP both describe the organizational structure and interfaces of the PPS Replacement Project. The documents describe the Nuclear Delivery (ND) design team structure and responsibilities, the Nuclear Independent Verification and Validation (IV&V) team structure and responsibilities, the interfaces between ND and Nuclear IV&V, lines of reporting, and degree of independence between ND and Nuclear IV&V. In addition, the PMP describes organizational boundaries between Invensys and the other external entities involved in the PPS Replacement project: PG&E, Altran, Westinghouse, and Invensys suppliers. The combination of the PMP and SVVP demonstrate compliance of the Invensys organization with RG 1.168.					
4	AR (RA)	<p>[ISG-06 Enclosure B, Item 1.10] <u>Software Configuration Management Plan</u>: The LAR includes PG&E CF2.ID2, "Software Configuration Management for Plant Operations and Operations Support," in Attachment 12. However, the document provided in Attachment 12 only provides a guideline for preparing Software Configuration Management (SCM) and SQA plans. Though it is understood that the licensee will not perform development of software, PGE personnel will become responsible for maintaining configuration control over software upon delivery from the vendor.</p> <p>The staff requires the actual plan to be used by the licensee for maintaining configuration control over PPS software in order to evaluate against the acceptance criteria of the SRP. For example, the ALS Configuration Management (CM) Plan (6002-00002) describes initial design activities</p>		Open	N/A		

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		related to ALS generic boards. This plan does describe the configuration management activities to be used for the development and application of the ALS platform for the Diablo Canyon PPS System. The staff requires that configuration management for this design be described in the DCCP project specific plan. These items will need further clarification during the LAR review to demonstrate compliance with BTP-14.					
		P&GE response: PG&E will develop a SyCMP procedure to address configuration control after shipment of equipment from the vendor and will submit the document by May 31, 2012.					
5	AR (RA)	[ISG-06 Enclosure B, Item 1.11] <u>Software Test Plan:</u> The V10 platform documents identified in ISG6 matrix state that the interface between the NGIO Core Software and IO-specific software will not be tested. It is not clear when and how this interface will be tested, and why this test is not part of the software unit testing and integration testing activities. Further, the 993754-1-813 Diablo Canyon Triconex PPS Validation Test Plan states that the DCCP's TSAP will not be loaded on the system; instead Triconex will use another TSAP for the validation test. It is not clear why the DCCP's TSAP will not be used for the validation test or when the DCCP's TSAP will be loaded on the system and validated for the Diablo Canyon PPS System. These items will need further clarification during the LAR review to demonstrate compliance with BTP-14.		Open	N/A		

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		<p>P&GE response:</p> <p>Tricon The next-generation input/output (I/O) modules qualified for the V10 Tricon are the 3721N 4-20 mA, 32-point analog input (AI) module, and the 3625N 24 Vdc, 32-point digital output (DO) module. Technical data on these two modules was provided to the NRC in support of the V10 Tricon safety evaluation. Configuration and functional testing is performed when the I/O modules (hardware and embedded core firmware) are manufactured. From the factory the I/O modules are shipped to Invensys Nuclear Delivery for use in nuclear system integration projects, i.e., application specific configurations. Because the module hardware and embedded core firmware are within the scope of the V10 Tricon safety evaluation, the verification and validation of the embedded core firmware will not be repeated as part of application-specific system integration projects.</p> <p>There are certain design items that must be done with TriStation 1131 (TS1131), such as specifying which I/O module is installed in a particular physical slot of the Tricon chassis, resulting in each module having a unique hardware address in the system. Also, TS1131 is used to specify which application program parameters (i.e., program variable tagnames) are assigned to a particular point on a given I/O module. The design items configured in TS1131 will be within the scope of validation activities conducted by Invensys Nuclear IV&V for application-specific system integration projects. The necessary collateral (system build documents, configuration tables, test procedures, test results, etc.) will be submitted to the NRC to support the staff's technical review of the PPS Replacement LAR</p>					

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		<p>in accordance with ISG-06.</p> <p>The Phase 1 submittal under Invensys Project Letter 993754-026T, dated October 26, 2011, contained, in part, the Validation Test Plan (VTP), 993754-1-813. This document describes the scope, approach, and resources of the testing activities that are required for validation testing of the V10 Tricon portion of the PPS Replacement, including:</p> <ul style="list-style-type: none"> Preparing for and conducting system integration tests Defining technical inputs to validation planning Defining the test tools and environment necessary for system validation testing Scheduling (and resource loading of the schedule) <p>Section 1.3.2 of the VTP describes the Hardware Validation Test activities and Section 1.3.3 of the VTP describes the V10 Tricon portion of the Factory Acceptance Test activities for the V10 Tricon portion of the PPS Replacement. Details on the application program are proprietary and need to be provided to the staff separately.</p>					
6	AR (SM)	<p>[ISG-06 Enclosure B, Item 1.14]</p> <p><u>Equipment Qualification Testing Plans</u> - The LAR Sections 4.6, 4.10.2.4 and 4.11.1.2 provide little information on the plant specific application environmental factors. The Tricon V10 Safety Evaluation, ML 11298A246, Section 6.2 lists 19 application specific actions Items (ASAI's) that the licensee should address for plant specific applications. The licensee should address each of these for Tricon portion of the PPS replacement. Similar information for the ALS portion of the PPS replacement will also be required.</p>		Open	N/A		

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		<p>P&GE response:</p> <p>ALS PG&E will respond to ALS ASAI's when they are available.</p> <p>Tricon</p> <p>IN PROGRESS. Each of the Application Specific Action Items will be addressed by end of February 2012.</p>					
7	AR (BK)	<p>[ISG-06 Enclosure B, Item 1.16]</p> <p><u>Design Analysis Reports:</u> The LAR does not appear to comply with the SRP (ISG-04) regarding the connectivity of the Maintenance Work Station to the PPS. The TriStation V10 platform relies on software to effect the disconnection of the TriStation's capability to modify the safety system software. Based on the information provided in the LTR, the NRC staff determined that the Tricon V10 platform does not comply with the NRC guidance provided in ISG-04, Highly Integrated Control Rooms—Communications Issues, (ADAMS Accession No. ML083310185), Staff Position 1, Point 10, hence the DCPD PPS configuration does not fully comply with this guidance.</p> <p>In order for the NRC staff to accept this keyswitch function as an acceptable deviation to this staff position, the staff will have to evaluate the DCPD PPS specific system communications control configuration—including the operation of the keyswitch, the software affected by the keyswitch, and any</p>		Open	N/A		

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		<p>testing performed on failures of the hardware and software associated with the keyswitch. The status of the ALS platform on this matter is unclear at this time and will be resolved as the ALS LTR review is completed.</p> <p>Moreover, the Tricon V10 system Operational Mode Change (OMC) keyswitch does change operational modes of the 3008N MPs and enables the TriStation 1131 PC to change parameters, software algorithms, etc, related to the application program of the safety channel without the channel or division being in bypass or in trip. As stated in Section 3.1.3.2 of the Tricon V10 SER, the TriStation 1131 PC should not normally be connected while the Tricon V10 is operational and performing safety critical functions. However, it is physically possible for the TriStation PC to be connected at all times, and this should be strictly controlled via administrative controls (e.g., place the respective channel out of service while changing the software, parameters, etc). The LAR does not mention any administrative controls such as this to control the operation of the OMC (operational mode change) keyswitch. Furthermore, in order to leave the non-safety TriStation 1131 PC attached to the SR Tricon V10 system while the key switch is in the RUN position, a detailed FMEA of the TriStation 1131 PC system will be required to ascertain the potential effects this non-safety PC may have on the execution of the safety application program/operability of the channel or division. These issues must be addressed in order for the NRC staff to determine that the DCPD PPS complies with the NRC Staff Guidance provided in Staff Position 1, Point 11. The status of the ALS platform on this point is unclear at this time.</p> <p>P&GE response:</p> <p>Tricon</p>					

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		<p>The OMC keyswitch controls only the mode of the V10 Tricon 3008N MPs. In RUN position the 3008N MPs ignore* all commands from external devices, whether WRITE commands from external operator interfaces or program-related commands from TS1131. Multiple hardware and software failures would have to occur on the V10 Tricon (in combination with human-performance errors in the control room and at the computer with TS1131 installed) in order for the application program to be inadvertently reprogrammed. Therefore, there is no credible single failure on the V10 Tricon that would allow the safety-related application program to be inadvertently programmed, e.g., as a result of unexpected operation of the connected computer with TS1131 installed on it.</p> <p>The above conclusion will be confirmed (for the V10 Tricon portion of the PPS Replacement) in the Failure Modes and Effects Analysis, an ISG-06 Phase 2 document planned for submittal to NRC in May 2012. Additionally, Invensys Operations Management will support the staff's review of the hardware and software associated with the OMC keyswitch by making all of the technical data available for audit.</p> <p>*TS1131 contains function blocks that allow WRITE-access to a limited set of parameters programmed into the application software, but only for a limited duration after which the capability is disabled until WRITE-access is re-enabled. However, without these function blocks programmed into the application program neither the application program nor application program parameters can be modified with the OMC keyswitch in the RUN position.</p> <p>PG&E Administrative controls on use of keyswitch will be provided with commitment to include in procedures in response. Note, TS1131 is not used to change setpoints and protection set is</p>					

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		inoperable when keyswitch is not in RUN position.					
8	AR (RS)	<p>[ISG-06 Enclosure B, Item 1.21] <u>Setpoint Methodology:</u> The NRC staff understands that a summary of SP (setpoint) Calculations will be provided in Phase 2, however, section 4.10.3.8 of the LAR also states that PGE plans to submit a separate LAR to adopt TSTF 493. The NRC cannot accept this dependency on an unapproved future licensing action. The staff therefore expects the licensee to submit a summary of setpoint calculations which includes a discussion of the methods used for determining as-found and as-left tolerances. This submittal should satisfy all of the informational requirements set forth in ISG6 section D.9.4.3.8 without a condition of TSTF 493 LAR approval</p> <p>P&GE response:</p> <p>A summary of the setpoint calculations will be submitted by May 31, 2011 including the as-found and as-left setpoints.</p>		Open	N/A		
9	AR (BK)	<p><u>LTR Safety Conclusion Scope and Applicability</u> - Many important sections of the DCPD PPS LAR refer the reader to the ALS licensing topical report (LTR) to demonstrate compliance of the system with various Clauses of IEEE 603-1991, IEEE 7-4.3.2-203, and ISG-04. However, many important sections of the ALS LTR state that compliance with various Clauses of these IEEE Stds and ISG-04 are application specific and refer the reader to an application specific license amendment submittal (i.e., the DCPD PPS LAR in this case). The staff has not yet had time to evaluate all the LAR information in detail</p>					

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		and compare this information with that provided in the ALS LTR to ensure there is no missing information. However, PG&E and its contractors are encouraged to review these two licensing submittals promptly to verify that compliance with these IEEE Stds and ISG-04 are adequately addressed within both licensing documents.					
		P&GE response: IN PROGRESS, review by Westinghouse and PG&E to date has not found a clause where no justification is provided in LAR.					
10	RS	<p><u>Plant Variable PPS Scope</u> - In the Description section of the LAR, section 4.1.3, nine plant variables are defined as being required for RTS and section 4.1.4 lists seven plant variables that are required for the ESFAS. Three additional plant variables were also listed in section 4.10.3.4.</p> <p>Some variables are not listed in section 4.10.3.4 as being PPS monitored plant parameters. It is therefore assumed that these parameters are provided as direct inputs to the SSPS and that the PPS is not relied upon for the completion of required reactor trip or safety functions associated with them. Please confirm that these plant parameters and associated safety functions will continue to operate independently from the PPS and that the replacement PPS will not adversely impact the system's ability to reliably perform these functions.</p>		Open	1		
		P&GE response: IN PROGRESS					

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
11	RS	<p><u>Power Range NIS Function</u> - Section 4.1.7 describes the Existing Power Range NIS Protection Functions and it states that the Power Range nuclear instrumentation provides input to the OTDT, and OPDT protection channels. It is not entirely clear whether any of the described NIS protection functions will be performed by the PPS system. Please clarify exactly what the role of the PPS system is for these NIS Protection functions.</p>	<p>P&GE response:</p> <p>IN PROGRESS</p>	Open	2		
12	RS	<p><u>Permissive Functions</u> - Several Permissive functions are described within the LAR. It is not clear to the staff whether any of these functions are to be performed by the PPS or if the PPS will only be providing input to external systems that in turn perform the permissive logic described in the LAR.</p> <p>Section 4.1.9 states that "Settings of the bistable comparators used to develop the permissives are not affected by the PPS Replacement Project", which implies that all of these permissive functions are performed by systems other than the PPS. However, it is still unclear if this statement applies to all permissive functions described throughout the LAR or if it applies only to those permissives relating to Pressurizer Pressure. It is also possible that the permissive functions are being performed by the existing PPS and will continue to be performed by the replacement system and therefore remain "not affected" by the PPS replacement project.</p>		Open	3		

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		<p>Please provide additional information for the following permissive functions to clearly define what the role of the PPS system will be for each.</p> <p>P-4 Reactor Trip P-7 Low Power Permissive (Bypasses low P_{pzt} reactor trip) * P-8 Loss of Flow Permissive P-9 Power Permissive P-10 Power Range Power Low Permissive P-11 Low Pressurizer Pressure SI Operational Bypass P-12 No-Load Low-Low T_{ave} Temperature Permissive P-13 Turbine Low Power Permissive * P-14 Hi-Hi Steam Generator Level</p> <p>* The LAR states that "These signals are generated in the PPS"</p>					
		<p>P&GE response:</p> <p>IN PROGRESS</p>					
13	RS	<p>P12 <u>Permissive Contradiction</u> - The second paragraph of section 4.1.20 describes the P-12 interlock and states that "These signals are developed in the PPS". This statement is then contradicted in the third paragraph by the following statement;</p> <p>"These valves are not safety-related, but are interlocked with the P-12 signal from the SSPS."</p>		Open	4		

No	Src/RI	Issue Description	P&GE response:	Status	RAI No. (Date Sent)	RAI Response (Due Date)	Comments
		In conjunction with the response to RAI3, please provide a resolution for this contradiction in section 4.1.20 of the LAR.					
		P&GE response: IN PROGRESS					

1		DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2		1	2	3	Document	Section	
3		X	X	X	Summary Description	Enclosure E	RS - Completed AR All required information is present. 11/8/11
4	2.1	X	X	X	No Significant Hazards Determination	Enclosure E	RS - Reference ISG6 D.4.4.2.1 SSA. This section of the LAR concludes that no new hazards will be introduced by performing this upgrade. This supports 2.1.
5	2.1	X	X	X	Safety Analysis/Justification for the Proposed Change	Enclosure E	RS - Chapter 3 of the LAR provides a description of the old and new PPS system functions but does not identify specific safety analysis implementation tasks to be performed as is described in D.4.4.2.1. Safety Analysis tasks may also be V&V tasks but there is no discussion here.
6	1.1	X	X	X	Hardware Architecture Descriptions 1. Describe individual channels 2. Describe overall system, including any hardware items not included in the channel description	D.1.2	BK-Completed Acceptance Review of this section-All required information is present. 12/5/11
7	1.2			X	Quality Assurance Plan for Digital Hardware	D.2.2	BK-Completed Acceptance Review of this section-All required information is present. 12/9/11
8	1.3	X	X	X	Software Architecture Descriptions: 1. Platform software 2. Application software 3. Software functions 4. Software relationships 5. References to previous NRC software evaluations 6. Software being used in individual channels 7. Overall system description, including software not included in the channel description	D.3.2	RS-Completed Acceptance Review of this section-All required information is present. 12/22/11

1	DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2	1	2	3	Document	Section	
9				BTP 7-14, B.3.3.2 1. Software operation 2. Deterministic nature of software	D.4.4.3.2	<p>BD - Per the ALS Topical Report, there is no embedded microprocessor or executable software within any standard board FPGA logic nor is it proposed for the application-specific FPGA logic. The application-specific FPGA logic controls the equipment operational sequence.</p> <p>Per the ALS Topical Report, the sequence is typically 1) input, 2) application-logic, and 3) output. Input and output includes internal instrument communications over the ALS bus using the ALS protocol. The proposed protocol is consistent with the MSFIS precedent, and has been made more reliable through redundant communication paths. Individual input and output boards independently process signals in dual-core logic. Input boards use field sensors to provide status data to the application-logic FPGA. Output boards use status data from the application-logic FPGA to actuate outputs.</p> <p>The exact equipment operational sequence and the required board set are defined at design time for each application-specific instrument and cannot be modified in the field. The application-logic FPGA configuration can access individual input and output boards at different pre-defined intervals, and each access verifies successful communications. Dual-core logic within each FPGA protects against an undetectable single-event upset failure. The application-logic asserts a failure whenever a board does not respond as required by the ALS protocol.</p> <p>The Diablo Specific Application should identify the board access sequence and provide corresponding analysis associated with digital response time performance. This analysis should be sufficient for the staff to determine that the logic-cycle has been implemented in conformance with the ALS Topical Report design basis, is deterministic, and that the response time is derived from plant safety analysis performance requirements and in full consideration of communication errors that have been observed during equipment qualification.</p>
10	1.4	X	X	Software Management Plan: BTP 7-14, Section B.3.1.1 1. Interface between licensee and vendor 2. Relationship between software development and quality checking groups 3. Secure development environment 4. Resource allocation	D.4.4.1.1	RA - see comments on the right
11	1.5	X	X	Software Development Plan: BPT 7-14, B.3.1.2 1. Careful and deliberate development process 2. Pointers to other plans (SVVP, SCMP) 3. Assurance that the other plans are being followed	D.4.4.1.2	RA - acceptance review done. See comments to the right. 1/10/2012
12	1.6	X	X	Software QA Plan: 1. Identify QA procedures applicable to programming processes 2. Methods chosen to implement QA procedural requirements	D.4.4.1.3	RA Section 4.5.3 of the LAR identifies SyQAP for software QA. However, this plan is the PG&E SYSTEM QA plan, which is provided in Attachment 4. The SyQAP describes project organization and QA organization. The SyQAP describes the roles and responsibilities associated with software QA, and describes SW audits and reviews. This plan states that SQAP is vendor specific.

1		DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRGAR
2		1	2	3	Document	Section	
13					1. Creation of conceptual design 2. Translation of the concepts into specific system requirements 3. Using requirements to develop a detailed system design 4. Implement design into hardware and software functions 5. Test functions to assure correct implementation of requirements	D.10.4.2.3.1	The SyQAP mentions a PG&E Procedure, IDAP CF2.ID9, Software Quality Assurance Plan Software Development, which is provided in ATTACHMENT 13. The SQAP describes the in-house process for development of new power plant related software applications. Not clear who this is used for this project, it does not seem relevant.
14	1.7	X	X	X	Software Integration Plan BTP 7-14, Section B.3.1.4 1. Analysis of SRS and SDD to determine order for combining software components 2. Documentation of integration methods 3. Describe integration tools, techniques, methodologies 4. Schedules 5. Resources	D.4.4.1.4	RS - acceptance review complete 3/16/2012
15							
16	1.8	X	X	X	Software Safety Plan BTP 7-14, Section B.3.1.9 describe: 1. Software safety effort 2. Interactions between software safety and general system safety organizations 3. Integration of software safety activities into other activities 4. Safety organization	D.4.4.1.9	RA See comments in documents' cells WK - Section 3 of the SSP describes the organization and who does what when SW safety issues are discovered...this is fairly typical of what we have seen in the past. Also, the SSP should address SW safety issues during development of the SW verses installation, maintenance, etc...recommend deleting this item.
17	1.9	X	X	X	Software V&V Plan BTP 7-14 Section B.3.1.10, SVVP Section B.3.2.2, Acceptance Criteria for software V&V activities Reg Guide 1.168 endorses IEEE 1012	D.4.4.1.10	RA The PG&E V&V plan does not clearly identify organizational independence. Also, this document states that PM of supplier is responsible for providing directions during implementation of V&V activities. Need to confirm that this does not violate independence. RS - PGE will not be developing software performing SVV activities for either platform of the PPS system therefore the level of independence requirements do not apply to PGE personnel.
18	1.10	X	X	X	Software Configuration Management Plan BTP 7-14 Section B.3.1.11, SCMP Section B.3.2.3, Acceptance Criteria for SCM activities	D.4.4.1.11	RA This document provides uniform, minimum acceptable requirements for preparing SCM and SQA plans - it is just guidelines! Need the SCM plan for this project - how this plan was implemented (i.e., Each plant system SCMP/SQAP will include details for handling vendor or contractor supplied software.)

1		DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2		1	2	3	Document	Section	
19	1.11	X	X	X	Software Test Plan BTP 7-14 Section B.3.1.12, Software Test Plan Section B.3.2.4, Acceptance Criteria for Testing Activities	D.4.4.1.12	RA - acceptance review done. See comments to the right.
20	1.12				Software Requirements Specification BTP 7-14, Section B.3.3.1 1. Reg Guide 1.172 endorsement of IEEE 830 2. Additional guidance in NUREG/CR-6101	D.4.4.3.1	RS - AR complete. All required information is available. 12/21/2011
21		X	X	X			
22	1.13	X	X	X	Software Design Specification BTP 7-14, Section B.3.3.3 1. Code accurately reflects software requirements 2. Detailed enough to allow reviewer to check requirements and follow them through the code	D.4.4.3.3	RS - AR complete. All required information is available. 12/21/2011
23	1.14		X	X	Equipment Qualification Testing Plans (Including EMI, Temperature, Humidity, and Seismic)	D.5.2	SM - The LAR Sections 4.6, 4.10.2.4 and 4.11.1.2 are attached. Diablo Canyon provided little information on the plant specific application. The Tricon V10 Safety Evaluation, ML 11298A246, Section 6.2 lists 19 items that the licensee should address for plant specific applications. Diablo Canyon should address them for Tricon portion of the PPS replacement. They should provide similar information for ALS portion of the PPS replacement.
24	1.15	X	X	X	D3 Analysis: BTP 7-19, Rev 6, Section D.6.3: 1. Describe and analyze diversity credited within the system or backup systems 2. Describe compliance of backup systems with BTP 7-19 and SRP Section 7.8 3. HFE analysis and integrated system validation for credited operator actions	D.6.2	RS - AR complete. All required information is available. 11/22/2011

1	DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2	1	2	3	Document	Section	
25	1.16	X	X	<p>Design Analysis Reports:</p> <p>1. Interdivision communication description</p> <p>2. ISG-04 Compliance analysis</p>	D.7.2	<p>BK - The LAR does not appear to comply with the SRP (ISG-04) regarding the connectivity of the Maintenance Work Station to the PPS. The TriStation V10 platform relies on software to effect the disconnection of the TriStation capability to modify the safety system software. Based on the information provided in the LTR, the NRC staff determined that the Tricon V10 platform does not meet the NRC Staff Guidance provided in Staff Position 1, Point 10, hence the DCPD PPS configuration does not meet ISG-04 guidance. All other ISG-04, Staff Position 1 points have been addressed for the Tricon Platform. The ALS portion of the PPS communications ISG-04 compliance documentation appears to be contained within the Tier 3 ALS platform documentation and will be addressed within the Platform SER--need to verify that this is all the ISG-04 compliance information required to review the communications design features of the ALS portion of the PPS.</p> <p>In order for the NRC staff to accept this keyswitch function as compliant with this Staff Position, the staff will have to evaluate the DCPD PPS specific system communications control configuration--including the operation of the keyswitch, the software affected by the keyswitch, and any testing performed on failures of the hardware and software associated with the keyswitch. The status of the ALS platform on this matter is unclear at this time and will be resolved as the ALS LTR review is completed.</p> <p>Moreover, the Tricon V10 system Operational Mode Change (OMC) keyswitch does change operational modes of the 3008N MPs and enables the TriStation 1131 PC to change parameters, software algorithms, etc, related to the application program of the safety channel without the channel or division being in bypass or in trip. As stated in Section 3.1.3.2 of the Tricon V10 SER, the TriStation 1131 PC should not normally be connected while the Tricon V10 is operational and performing safety critical functions. However, it is physically possible for the TriStation PC to be connected at all times, and this should be strictly controlled via administrative controls (e.g., place the respective channel out of service while changing the software, parameters, etc). The LAR does not mention any administrative controls such as this to control the operation of the OMC keyswitch. Furthermore, in order to leave the non-safety TriStation 1131 PC attached to the SR Tricon V10 system while the key switch is in the RUN position, a detailed FMEA of the TriStation 1131 PC system will be required to ascertain the potential effects this non-safety PC may have on the execution of the safety application program/operability of the channel or division. These issues must be addressed in order for the NRC staff to determine that the DCPD PPS complies with the NRC Staff Guidance provided in Staff Position 1, Point 11. Again, status of the ALS platform on this point is unclear at this time.</p>
26					D.9.4.2.6	BK
27					D.10.4.2.6	
28					D.8.2	

1		DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2		1	2	3	Document	Section	
29					System Description (To block diagram level) 1. Provide sufficient information to support the assertion that the proposed digital I&C system meets the requirements of IEEE 603-1991. 2. A document that points to other documentation where the information may be found may be used 3. Information necessary to address the various clauses of the standard are elaborated in Section D9.4	D.9	BK
30	1.17	X	X	X		D.10	RS-Completed Acceptance Review of this section-All required information is present. 12/23/2011
31					Design Report on Computer integrity, Test and Calibration, and Fault Detection	D.9.4.2.5[5.5]	RS-Completed Acceptance Review of this section-All required information is present. 1/9/2012
						D.9.4.2.7 [5.7]	
						D.9.4.2.10 [5.10]	
						D.9.4.3.5 [6.5]	
						D.10.4.2.5 [5.5]	
						D.10.4.2.7 [5.7]	
	1.18		X	X			
37					System Response Time Analysis Report IEEE 603 Clause 5.4 Confirm that the safety system equipment is designed to meet the functional performance requirements over the range of normal, abnormal, and accident conditions for the area in which it is located.	D.9.4.2.4	BK-The LAR section 4.2.12 provides sufficient information for the AR. The maximum PPS response time is identified as no greater than 0.409 seconds and the PPS Response Time Analysis Report will be provided as a Phase 2 document.
	1.19	X	X	X			

1	DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2	1	2	3	Document	Section	
38	1.20	X	X	Theory of Operation Description	D.9.4.2.8	BK
39					D.9.4.2.9	
40					D.9.4.2.10	
41					D.9.4.2.11	
42					D.9.4.2.13	
43					D.9.4.2.14	
44					D.9.4.3.2	
45					D.9.4.3.5	
46					D.9.4.3.6	
47					D.9.4.3.7	
48					D.9.4.4	
49	1.21	X	X	Setpoint Methodology IEEE 603 Clause 6.8 If any TS setpoints are changed, document the methodology that determines the allowance for uncertainties between the process analytical limit and the device setpoint.	D.9.4.3.8	RS - Summary of SP Calcs will be provided in Phase 2, however, the licensee also plans to submit a separate LAR to adopt TSTF 493. We do not have a schedule for submittal or review of this LAR and it may impact our ability to complete this SE.
50				Technical Specifications 1. Document the effect of the digital I&C system on Surveillance Requirements, channel checks, channel calibrations. 2. If changes will be made later to the digital I&C system programming or system settings without prior approval, refer to the appropriate development methodologies in the administrative section of the TS.	D.11	
51	1.22		X	Vendor Software Plan	D.10.4.2.3.1	WK - See Attachment 4 SyQAP Document
52	1.23	X	X	Software Tool Verification Program	D.10.4.2.3.2	RS - See Attachment 4 SyQAP Document

1		DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2		1	2	3	Document	Section	
53	1.24	X	X	X	Software Project Risk Management Program IEEE 7-4.3.2 Clause 5.3.6 1. Identify potential problems 2. Assess their impact 3. Determine which potential problems should be addressed to achieve project quality goals	D.10.4.2.3.6	RS - Risk aspects of software development to be addressed within the Software Management Plan. See 1.4 above. See D10.4.2.3.6 and evaluate accordingly. Licensee's response to this relies solely on Vendor Risk assessments within vendor SMP's. AR complete 1/9/2012
54	1.25		X	X	Commercial Grade Dedication Plan	D.10.4.2.4.2	RS - Licensee claims that no commercial computers are used in PPS. All CGD is performed at platform level.
55	1.26	X	X	X	Vulnerability Assessment Identify vulnerabilities during all phases of the project including development and operations	D.12.4.1	TM
56	1.27	X	X	X	Secure Development and Operational Environment Controls Identify deficiencies that could lead to degradation in reliable system operation due to inadvertent access or undesirable behavior of connected systems	D.12.2.1	TM-Description of Security Controls to be implemented in the CD PPS - As of 11/18/11, awaiting the licensee submittal under 2.390 (See page 204 of the LAR) RS - PGE Letter DCL-11-123 transmits security related information to support PPS replacement. This document is now in the PGE Documents folder on the G drive. TM - As of 12/23/11 - I read through this licensee and vendor (via licensee) submissions. Assuming that all these documents do hit the official docket, I believe that there is sufficient material to initiate the review. I do anticipate having some RAI questions, but nothing that needs to hold up acceptance. [Interestingly, the licensee points to several of their cyber plan controls . . . since the 73.54 cyber plans are new, this will be a new wrinkle to these reviews.]
57					1. Identify measures taken to secure the requirements and requirements development process. 2. These measures may be included with the platform and/or application software requirements document.	D.12.2.2	
58					1. Identify design phase activities aimed at precluding introduction of unwanted, unneeded and undocumented design features. 2. The measures may be included in a separate document of s part of one or more other documents	D.12.2.3	
59					1. Identify measures aimed at precluding introduction of unwanted, unneeded and undocumented features during the implementation phase. 2. Identify measures taken to protect the developed code. 3. The measures may be included in a separate document of s part of one or more other documents	D.12.2.4	

1		DI&G-ISG-06 Tier			DI&G-ISG-06 Rev 1 (Phase1)		NRCAR
2		1	2	3	Document	Section	
60					1. Verify and validate secure operational environment design feature criteria 2. Be secure from inadvertent manipulation of test environment and test results 3. Address test phase vulnerabilities identified in vulnerability assessment 4. The measures may be included in a separate document of s part of one or more other documents	D.12.2.5	
61		X	X	X	References	Enclosure E	

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
3	1 Summary Description	LAR Section 1 Summary Description								
4	2 No Significant Hazards Determination	LAR Section 2 No Significant Hazards Determination								
5	3 Safety Analysis/Justification for the Proposed Change	LAR Section 3 Safety Analysis/Justification for the Proposed Change. Chapter 3 of the LAR does not provide sufficient information to address this. Software Safety analysis will be provided in Phase 2.								
6	4.2 System Description (4.2.1 - 4.2.11)	Part of LAR Section 4.2 Point to Vendor Documents		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A152 ML11277A152	9/12/11 Rev 0	3.1.8
7	4.3 Hardware Development Process	LAR Section 4.2.11, 4.3 Point to WEC/ALS Hardware Development Process description in Tier 3 submittal documentation		CSI Quality Assurance Manual (Rev 6 11/11/11) (Related to Appendix B Program)	Yes ML11320A102	New Revision exists from Rev 4 7/9/10 ML102160484	9000-00000 QA Manual	Yes ML102160471	Rev 4 6/10/2011	
8	4.4 Software Architecture	LAR Section 4.4 Point to Vendor Documents		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-10201 Diablo Canyon PPS ALS FPGA Requirements Specification	Yes ML11277A151 ML11277A152	9/12/11 Rev 0	3.1.7

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
9							WNA-DS-02442-PGE DCPD PPS ALS System Requirements Specification	Yes ML11279A161 ML11279A159	9/12/11 Rev 2	
10	4.5 Software Development Process	<p>LAR Section 4.5.1, 4.5.3 Project Plan and SyQAP</p> <p>Point to vendor topicals and documents as needed.</p> <p>DCPP Program Directive CF2 [49] and procedures CF2.ID2 [50] and CF2.ID9 [51] control software development throughout the remaining life cycle phases (i.e., Operations, Maintenance, Retirement) under the control of PG&E after development and delivery of software and/or systems to PG&E from the 10 CFR 50 Appendix B Suppliers.</p>		<p>ALS Management Plan (Rev 4 10/31/11) 6002-00000</p> <p>(There is a Previous Rev 2, but used Rev 4)</p> <p>This plan states that for an application, there will be an application specific management plan to document activities beyond the generic platform</p>	<p>Yes ML11320A107 No ML11320A051</p>	<p>New Revision exists from Rev 2 1/26/11 ML110410328 and ML110410381(NP)</p>	<p>6116-00000 Diablo Canyon PPS Management Plan</p> <p>This document covers phase 1 - support Diablo Canyon LAR. A later revision will be created to describe mgmt activities for design, implementation, testing and manufacturing of the ALS-based chassis that will be installed by PG&E</p> <p>The organization chart shows the V&V reporting to the PM, which seems to contradict the platform document. Need to clarify this.</p>	Yes ML11277A153	7/29/11 Rev 0	3.1.3

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
11		<p>LAR Section 4.5.2 SyQAP</p> <p>Point to vendor topicals and documents as needed.</p> <p>Risk management for the ALS platform is a part of the SVP. This is included as part of the Life Cycle and is documented in the DCPD ALS Management Plan. The ALS Life Cycle Management Process is described in Section 6 of ALS Topical Report Submittal</p>		<p>ALS Management Plan (Rev 4 10/31/11) 6002-00000</p> <p>Previous Rev 2</p>	<p>Yes ML11320A107 No ML11320A051</p>	<p>New Revision exists from Rev 2 1/26/11 ML110410328 and ML110410381(NP)</p>	<p>6116-00000 Diablo Canyon PPS Management Plan</p> <p>The organization chart shows the V&V reporting to the PM, which seems to contradict the platform document. Need to clarify this.</p>	<p>Yes ML11277A153</p>		3.1.3
12		<p>LAR Section 4.5.3</p> <p>Point to vendor topicals and documents as needed.</p>		<p>ALS Quality Assurance Plan (Rev 6 11/11/11) 6002-00001</p> <p>Reviewed Rev 6. This is the platform specific QA plan. This plan refers to the ALS MGMT plan for project organization. This plan works under the umbrella of the CSI Quality Assurance</p>	<p>Yes ML11320A074 No ML11320A049</p>	<p>New Revision exists from Rev 4 8/12/10 ML102570793 and ML102570787(NP)</p>	<p>6002-00001 ALS Quality Assurance Plan</p>	<p>Yes ML102570793 No ML102570787</p>	<p>Rev 4 5/28/2011</p>	3.1.5

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
				Manual - 9000-00000. Not clear about the specific process for the Diablo Canyon project						

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
14		LAR Section 4.5.4 Point to Vendor Topicals/Documentation as needed		FPGA Development Procedure (Rev 2 7/12/10) 9000-00313	Yes ML102160486		9000-00313 FPGA Development Procedure	Yes ML102160486	5/28/11	NA
15				Electronics Development Procedure (Rev 4 7/29/10) 9000-00311	Yes ML102160485		9000-00311 Electronics Development Procedure	Yes ML102160485	5/28/11	NA
16		LAR Section 4.5.5 Point to Vendor Topicals/Documentation as needed PG&E needs to develop a plan for Software safety concerns during installation, maintenance, operation, and retirement.		ALS Security Plan (Rev 0 7/29/10) 6002-00006	Yes ML102160479		6116-00000 Diablo Canyon PPS Management Plan. Section 5.11 This plan covers planning, development, manufacturing, and system test. Additional activities are the responsibility of the licensee. It does not include safety organization - it may be project specific. Reference ALS security plan - still no identification of safety organization. A detailed report covering the results of an ALS-based chassis-level failure mode and effects	Yes ML11277A153	7/29/11 Rev 0	3.1.10

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
							analysis (FMEA) performed on the project's ALS-based chassis can be found in Diablo Canyon PPS Reliability and Failure Mode and Effects Analysis, document #6116-00029. This document is not available in the G drive for acceptance review.			
17		LAR Section 4.5.6 53. PG&E, "Software System V&V Plan (SyVVP) for the PPS Replacement Project" - Attachment 5 Topicals/Documentation as needed		ALS V&V Plan (Rev 5 9/28/11) 6002-00003	Yes ML11320A075	New Revision exists from Rev 4 1/24/11 ML110410319	6002-00003 ALS VV Plan The ALS V&V Plan states that for project specific systems, the VV activities is determined on a project by project basis and is described in the project Management Plan - 6116-00000, "Diablo Canyon PPS Management Plan". However, the 6116-00000 Diablo Canyon PPS Management Plan: "See the ALS V&V Plan for more information and the interface between the IV&V team and the PPS Replacement project team."	Yes ML110410380 ML110410319	Rev 4 5/28/2011	3.1.12

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
							<p>The organization chart in 6116-00000 Diablo Canyon PPS Management Plan shows the IVV manager reporting to the PM.</p> <p>The VV& plan does not address the requirements in ISG#6.</p>			
18		<p>LAR Section 4.5.7 PG&E CF2.ID2, "Software Configuration Management for Plant Operations and Operations Support" - Attachment 12</p> <p>Topicals/Documentation as needed</p>		<p>ALS Configuration Management Plan (Rev 4 8/11/10) 6002-00002</p>	<p>Yes ML102570794 No ML102570788</p>		<p>6002-00002 ALS Configuration Management Plan, Rev 4</p> <p>This ALS CM Plan is for initial design activities related to ALS boards. Need SCM plan for development and application of the platform.</p>	<p>Yes ML102570794 No ML102570788</p>	<p>Rev 4 5/28/2011</p>	3.1.4

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
19		LAR Section 4.5.8 Point to Vendor Documents as needed		<p>ALS Test Plan (Rev 2 11/3/11) 6002-00005</p> <p>Reviewed Rev 2. This plan describes the process of test planning, test specification, and test reporting for the generic ALS platform. System integration testing, factory acceptance testing, installation and site acceptance testing are application specific and will be addressed in application-specific test plans.</p>	<p>Yes ML11320A078</p>	<p>New Revision exists from Rev 0 7/29/11 ML102160478</p>	<p>6116-00005 Diablo Canyon PPS System Test Plan</p> <p>Site Acceptance Testing (SAT) will be performed by the end customer and will not be covered in this document. V&V and EQ testing are described in other documents.</p> <p>The ALS-102 FPGA design is changed for the DCPPS System. Thus, there should be a design verification test of this board. Where is this described? Section 5.3.3 states: "Test as many of the ALS-102 requirements as possible." It doesn't seem as formal testing</p>	<p>Yes ML11277A153</p>	<p>7/25/11 Rev 0</p>	<p>3.1.11</p>
20				<p>ALS Platform Requirements Specification (Rev 9 10/5/11) 6002-00010</p>	<p>Yes ML11320A080</p>	<p>New Revision exists from Rev 7 2/24/11 ML110600691</p>	<p>6116-10201 Diablo Canyon PPS ALS FPGA Requirements Specification</p>	<p>Yes ML11277A151 ML11277A152</p>	<p>9/12/11 Rev 0</p>	<p>3.1.7</p>

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
21		LAR Section 4.5.9 Point to Vendor Documents as needed					WNA-DS-02442-PGE DCPD PPS ALS System Requirements Specification	Yes SRS - ML11279A161 Letter - ML11279A160	9/12/11 Rev 2	
22		LAR Section 4.5.10 Point to Vendor Documents as needed		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A152	9/12/11 Rev 0	3.1.8
23	4.6 System Qualification	LAR Sections 4.6, 4.10.2.4, 4.11.1.2 Point to Vendor Topicals/Documentation as needed)		ALS EQ Plan (Rev 6 11/8/11) 6002-00004	Yes ML102160477	New Revision exists from Rev 5 7/30/10 ML102160477	6002-00004 ALS EQ Plan	Yes ML102160477	Rev 5 4/8/2011	3.1.6
24	4.7 Defense-in-Depth & Diversity	PG&E D3 Topical Report - ML102580727 Letter - ML102580726 CSI Topical Report	TR Approved Received SE 4/19/11 ML110480845	ALS Diversity Analysis (Rev 1 7/29/10) 6002-00031	Yes ML102160483		6002-00031 ALS Diversity Analysis	Yes ML102160483	Rev 1 4/8/2011	NA
25	4.10 Communications	LAR Sections 4.7, 4.9, 4.10 (Point to Vendor Topicals/Documentation as needed)		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A153 ML11277A151	9/12/11 Rev 0	3.1.8

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
26	4.10 IEEE 603 Conformance									
27	4.11 IEEE 7-4.3.2 Conformance									
28	4.9 Design Methodology Modifications	Part of LAR Section 4.9 Point to Vendor Documents describing deviations to the system, hardware, software or design methodology from prior NRC approval		ALS Management Plan (Rev 4 10/31/11) 6002-00000	Yes ML11320A107 No ML11320A051	New Revision exists from Rev 2 1/26/11 ML110410328 and ML110410381(NP)	6116-00000 Diablo Canyon PPS Management Plan	Yes ML11277A152 ML11277A152	7/29/11 Rev 0	3.1.3
29	4.10 Conformance with IEEE 603	Part of LAR Section 4.10 - Conformance with IEEE 603 Point to applicable sections of Vendor Topical Reports as needed)		ALS Platform Requirements Specification (Rev 9 10/5/11) 6002-00010	Yes ML11320A080	New Revision exists from Rev 7 2/24/11 MML110600691	6116-00011 Diablo Canyon PPS ALS System Design Specification		9/12/11 Rev 0	3.1.8
30	4.11 - Conformance with IEEE 7-4.3.2	Part of LAR Section 4.11 - Conformance with IEEE 7-4.3.2 Point to applicable sections of Vendor Topical Reports as needed)					6116-00011 Diablo Canyon PPS ALS System Design Specification			3.1.8
31	4.10 Conformance with IEEE 603	Part of LAR Section 4.10 - Conformance with IEEE 603(Point to WEC/ALS Topicals/Documentation in Tier 3 submittal		ALS Platform Specification (Rev 8 10/31/11)6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A152 ML11277A152		3.1.8
32										
33										

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
34		documentation as needed)								
35	4.11 - Conformance with IEEE 7-4.3.2	Part of LAR Section 4.11 - Conformance with IEEE 7-4.3.2 (Point to WEC/ALS Topicals/Documentation in Tier 3 submittal documentation as needed)								
36										
37	4.10 Conformance with IEEE 603	LAR Section 4.2.12, 4.10.2.4 Point to Vendor Topicals/Documentation as needed Phase 2 will provide response time confirmation report		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A152 ML11277A152		3.1.8
38	4.10 Conformance with IEEE 603	LAR Section 4.10 - Conformance with IEEE 603 Point to Vendor Topicals/Documentation as needed		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A152 ML11277A152		3.1.8
39										
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49	4.10 Conformance with IEEE 603	LAR Section 4.10.3.8		ALS Platform Specification (Rev 8 10/31/11) 6002-00011	Yes ML11320A101	New Revision exists from Rev 6 2/24/11 ML110600695	6116-00011 Diablo Canyon PPS ALS System Design Specification	Yes ML11277A152 ML11277A153		3.1.8

1	PG&E Documents to be Submitted with LAR			Westinghouse/CSI Documents to be Submitted with LAR						
2	LAR Section	Document Title	Notes	Tier 3 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	PO
50	4.12 Technical Specifications									
51	4.11 - Conformance with IEEE 7-4.3.2	SyQAP LAR Section 4.11.1.1.1, 4.11.1.1.2 Point to Vendor Topicals/Documentation as needed		ALS Management Plan (Rev 4 10/31/11) 6002-00000	Yes ML11320A107 No ML11320A051	New Revision exists from Rev 2 1/26/11 ML110410328 and ML110410381(NP)	6116-00000 Diablo Canyon PPS Management Plan	Yes ML11277A15	7/29/11 Rev 0	3.1.3
52				ALS Design Tools (Rev 6 11/9/11) 6002-00030	Yes ML11320A104	New Revision exists from Rev 5 1/28/11 ML110410312	6002-00030 ALS Design Tools	Yes ML110410380 ML110410312	Rev 5 4/8/2011	NA
53	4.11 - Conformance with IEEE 7-4.3.2	LAR Section 4.11.1.1.6 Point to Vendor Topicals/Documentation as needed. Specifically, 4.11.1.6 points to the Vendor SMP's via reference to 4.5.1 of the LAR. (All proprietary)		ALS Management Plan (Rev 4 10/31/11) 6002-00000 Section 5.4 (All proprietary)	Yes ML11320A107 No ML11320A051	New Revision exists from Rev 2 1/26/11 ML110410328 and ML110410381(NP)	6116-00000 Diablo Canyon PPS Management Plan	Yes ML11277A153	7/29/11 Rev 0	3.1.3
54	4.11 - Conformance with IEEE 7-4.3.2 (5.4.2) [LAR Section 4.11.1.2.2, & 4.11.1.2.3]	LAR Section 4.11.1.2.2 Point to WEC/ALS Topicals/Documentation as needed		None			Diablo Canyon ALS Dedication Plan (The ALS Platform does not have any parts that need dedication, but the application will most likely have some parts (relays, isolators, etc) that do require dedication)		No Diablo Canyon-specific document required, current scope of supply delivers only ALS chassis	NA

1	Triconex Documents to be Submitted with LAR						
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes
3							
4							
5							
6	V10 Platform Document (s): - 9100042-002 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200152-002 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		993754-1-914 Diablo Canyon Triconex PPS System Architecture Description (incl Hardware and Software)	Yes ML11318A073	Rev 0 10/20/11	
7	Not Applicable for Tier 2			Not Applicable for Tier 2			
8	V10 Platform Document(s): - 6200106-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		993754-1-914 Diablo Canyon Triconex PPS System Architecture Description (incl Hardware and Software)	Yes ML11318A073	Rev 0 10/20/11	
9							
10	V10 Platform Document(s): - QPM 13.2 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - EDM 12.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] QPM 13.2 is for identifying product discrepancies. This is used to initiate a revision to a product, this is the input to the requirements phase described in EDM12.0 EDM 12.0 describes product development process. It states that additional features are described in the Engineering Project Plans for the specific product. The EPP defines all key parameters of the project. It provides a statement of work, project deliverables, and schedule milestones, including all phase completion reviews. EDM 12.10 describes engineering project planning - all product development efforts which result in a new release of software or hardware will have an EPP. The EPP is a summary of the scope, objectives, costs, and execution steps associated with a project.	Yes		993765-1-905 Diablo Canyon Triconex PPS Project Management Plan	Yes ML11318A049	Rev 1 10/13/11	

1	Triconex Documents to be Submitted with LAR						
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes
11	<p>V10 Platform Document(s): - EDM 12.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]</p> <p>This document refers to the EPP, which defines all key parameters of the project. It provides a statement of work, project deliverables, and schedule milestones, including all phase completion reviews. The EPP is a summary of the scope, objectives, costs, and execution steps associated with a project.</p>	Yes		993754-1-906 Diablo Canyon Triconex PPS Software Development Plan	Yes ML11314A265	Rev 0 08/17/11	
12	<p>V10 Platform Document(s): - EDM 11.03 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] (ML101121019) - QPM 2.1 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9600164-537 (P) [NRC Submittal Ltr: NRC-V10-09-006][NRC Ref ML083370293 ML093370299]</p> <p>EDM 11.03-Process and Product Quality Assurance -- this defines the Process and Product Quality Assurance for a project. This EDM states that an EPP is created for the project as defined by EDM 12.10. This document said that PQP can be a part of the EPP. QPM 2.1- Quality Planning -- process to develop QA plan. Note EDM 12.00 addresses the overview of the entire lifecycle of product development and release. The SQAP defines the quality assurance measures to be applied to the Tricon V10 software TSAP. This SQAP describes measures for TSAP for generic platform qualification and testing -the TSAP is one-time usage test software. Not applicable for Diablo Canyon.</p>	Yes		<p>993754-1-801 Diablo Canyon Triconex PPS Software Quality Assurance Plan</p> <p>SQAP for Diablo Canyon project - TSAP application. References the Invensys Nuclear System Integration Program Manual (NSIPM), which describes processes, reviews, and tests to be followed.</p>	Yes ML11318A050	Rev 0 08/17/11	
13							
14	V10 Platform Document (s): [NA - Same as V9 SER]			993754-1-910 Diablo Canyon Triconex PPS Software Integration Plan	Yes ML11314A267	Rev 1 10/14/11	
15		Yes					

1	Triconex Documents to be Submitted with LAR						
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes
16	<p>V10 Platform Document (s): [NA - Same as V9 SER]</p> <p>V9 and V10 provided sufficient information for the generic platform</p> <p>For plant-specific configurations utilizing the Tricon V10, the development process for safety related application software will be controlled under the IOM NSIPM. Invensys will work with the Licensee to identify applicable Tricon V10 security performance requirements that should be incorporated, and, in accordance with the IOM NSIPM, provide traceability of these requirements into the plant-specific implementation of the application software. In addition to the NSIPM, the Nuclear Delivery Programming Guide, Invensys document 9600380-001, provides guidance on Tricon V10 application programming for nuclear system integration projects. [NSIPM ML102040078.pdf] Included on G drive.</p>	Yes		993754-1-911 Diablo Canyon Triconex PPS Software Safety Plan	Yes ML113314A268	Rev 1 10/13/11	
17	<p>V10 Platform Document(s): - EDM 90.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - EDM 90.10 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]</p> <p>The verification plan states that a System Integration and Verification Plan for the product is created. Not sure if this is the same that the Diablo Canyon V&V plan. The validation plan states that a System Validation Plan shall be created. Also, scope of V&V is identified in the Engineering Project Planning.</p>	Yes		993754-1-802 Diablo Canyon Triconex PPS Software V&V Plan	Yes ML11318A079	Rev 0 08/17/11	
18	<p>V10 Platform Document(s): - EDM 20.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - EDM 24.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]</p>	Yes		993754-1-909 Diablo Canyon Triconex PPS Software Configuration Management Plan	Yes ML11314A266	Rev 0 08/16/11	
19	<p>V10 Platform Document(s): - 6200159-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110709, Page 869] - 6500155-000 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110709, Page 789]</p> <p>6200159-001 describe the plan for testing the NGIO Core Software. It covers the software unit testing and integration testing activities. This document states: The interface between the Core Software and IO-specific Software will not be tested. Where is this covered?</p> <p>6500155-000 specifies the overall Verification activities that must be performed to release the OPC Embedded Tricon Communication Module TCM 2.0.</p>	Yes		993754-1-813 Diablo Canyon Triconex PPS Validation Test Plan	Yes ML113118A072	Rev 0 10/13/2011	
20						Rev 0 10/27/2011	

1	Triconex Documents to be Submitted with LAR						
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes
21	V10 Platform Document(s): - 6200106-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200155-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200152-003 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200033-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200033-002 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100042-002 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100098-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100098-002 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		993754-1-809 Diablo Canyon Triconex PPS Software Requirements Specification (SRS). Protection set I - 993754-11-809, Protection set II - 993754-12-809, Protection set III - 993754-13-809, and Protection set IV - 993754-14-809	Yes Letter - ML11307A267 SRS PS1 - ML11307A268 SRS PS2 ML11307A269 SRS PS3 ML11307A270 SRS PS4 ML11307A271		
22	V10 Platform Document(s): - 6200106-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200156-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 6200152-004 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		993754-1-809 Diablo Canyon Triconex PPS Software Requirements Specification (SRS)	Yes Letter- ML11307A267 SRS -	Rev 0 10/27/2011	
23	V10 Platform Document(s): - EDM 74.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - EDM 21.30 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9600164-500 (NP) [NRC Ref ML093280228]	P/NP as Indicated		N/A (Provided by Platform)			
24	V10 Platform Document(s): - NTX-SER-09-10 (NP) [NRC Ref ML110140449]			N/A (Provided by PG&E D3 Topical Report)			
25	V10 Platform Document(s): - NTX-SER-09-10 (NP) [NRC Ref ML110140449]	P/NP as Indicated		993754-1-912 Diablo Canyon Triconex PPS ISG-04 Conformance Report	Yes ML11314A263	Rev 0 08/16/11	
26	- 9600164-535 (NP) [NRC Ref ML092870627]						
27	- 9600164-539 (P) [NRC Submittal Ltr: NRC-V10-09-003][NRC Ref ML092870627]						
28							
29	V10 Platform Document(s): - 9791007-013 (NP) [NRC Ref ML093290424]			993754-1-914 Diablo Canyon Triconex PPS System Architecture Description (incl Hardware and Software)	Yes ML11318A073	Rev 0 10/20/11	
30							
31	V10 Platform Document(s):- 9600164-539 (P) [NRC Submittal Ltr: NRC-V10-09-003][NRC Ref ML092870627]- 9600164-731 (P) [NRC Submittal Ltr: NRC-V10-09-007][NRC Ref ML093280198]- 9600164-534 (NP) [NRC Ref ML101110708]- 9600164-531 (NP) [NRC Ref ML093280223]			N/A (Provided by Platform)			
32							
33							

1	Triconex Documents to be Submitted with LAR							
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes	
34		P/NP as Indicated						
35								
36								
37	V10 Platform Document(s): - 9600164-731 (P) [NRC Submittal Ltr: NRC-V10-09-007][NRC Ref ML093280198]	Yes		N/A (Provided by Platform)				
38		P/NP as Indicated		N/A (Provided by Platform)				
39								
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41								
42								V10 Platform Document(s): - 9700077-012 (NP) [NRC Ref ML093290420]
43								- 9100112-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]
44								
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47								
48								
49	V10 Platform Document(s): Not applicable for platform			NA - Not in Invensys Scope				
50	V10 Platform Document(s): Not applicable for platform							

	Triconex Documents to be Submitted with LAR						
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes
51	V10 Platform Document(s): Not applicable for platform			Not Applicable for Tier 2			
52	V10 Platform Document(s): - EDM 90.30 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		N/A			
53	V10 Platform Document(s): - EDM 12.10 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100046-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		993754-1-905 Diablo Canyon Triconex PPS Project Management Plan	Yes ML11318A049	Rev 1 10/13/11	
54	V10 Platform Document(s): - EDM 76.00 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100055-001 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100055-103 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - 9100055-105 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - MDM 12.1 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707] - Dedication Package 022110 (P) [NRC Submittal Ltr: NRC-V10-10-003][NRC Ref ML101110707]	Yes		N/A (Provided by Platform)			
55	V10 Platform Document(s): - NTX-SER-10-14 (NP) [NRC Ref ML102040062]			993754-1-913 Diablo Canyon Triconex PPS Regulatory Guide 1.152 Conformance Report	Yes ML11314A262	Rev 0 09/06/2011	
56							
57	V10 Platform Document(s):	Yes		993754-1-913 Diablo Canyon Triconex PPS Regulatory Guide 1.152 Conformance Report	Yes ML11314A262	Rev 0 09/06/2011	
58	- NTX-SER-10-14 (NP) [NRC Ref ML102040062]						
59							

1	Triconex Documents to be Submitted with LAR						
2	Tier 2 Platform Review Document Title	Proprietary	Notes	LAR Document Title	Proprietary	Delivered	Notes
60							
61							

Please direct any inquiries to me at 301-415-1132 or at Joseph.Sebrosky@nrc.gov.

/RA/

Joseph M. Sebrosky, Senior Project Manager
Plant Licensing Branch IV
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
3. DI&C-ISG-06 review matrix for Diablo Canyon

cc w/encls: Distribution via Listserv

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LPLIV Reading

RidsAcrsAcnw_MailCTR Resource

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RidsNrrLAJBurkhardt Resource

RidsNrrPMDiabloCanyon Resource

RidsOgcRp Resource

RidsRgn4MailCenter Resource

WMaier, RIV

CSteger, NRR

WKemper, NRR/DE/EICB

RStattel, NRR/DE/EICB

BDittman, NRR/DE/EICB

LChang, EDO RIV

ADAMS Accession No. Summary ML120590119

*via email

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NRR/DE/EICB/BC	NRR/DORL/LPL4/BC	NRR/DORL/LPL4/PM
NAME	JSebrosky	JBurkhardt	WKemper*	MMarkley	JSebrosky
DATE	2/29/12	2/28/12	2/28/12	2/29/12	2/29/12

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