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October 27, 2010

PG&E Letter DCL-10-133

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20852

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2

Response to NRC Letter dated September 29, 2010, Summary of Telephone Conference Call Held on August 31, 2010, Between the U.S. Nuclear Regulatory Commission and Pacific Gas and Electric Company Concerning Responses to Requests for Additional Information (Sets 2 and 13) Related to the Diablo Canyon Nuclear Power Plant, Units 1 and 2, License Renewal Application

Dear Commissioners and Staff:

By letter dated November 23, 2009, Pacific Gas and Electric Company (PG&E) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for the renewal of Facility Operating Licenses DPR-80 and DPR-82, for Diablo Canyon Power Plant (DCPP) Units 1 and 2, respectively. The application included the license renewal application (LRA) and Applicant's Environmental Report – Operating License Renewal Stage.

By letter dated September 29, 2010, the NRC staff sent a summary of a telephone conference between the NRC and representatives of PG&E held on August 31, 2010. This telephone conference was to obtain clarification on the applicant's response to request for additional information (RAI) submitted to the NRC in PG&E Letter DCL-10-067, dated June 18, 2010 and PG&E Letter DCL-10-104, dated August 17, 2010. PG&E's supplemental information to the RAI responses for which the staff requested clarification is provided in Enclosure 1. Other follow-up RAIs determined by the NRC staff to be necessary will be issued separately by a formal letter.

PG&E has identified additional changes that are required in the LRA submitted in Enclosure 2. LRA Amendment 22 is included in Enclosure 2 showing the changed pages with line-in/line-out annotations. A schematic of the condensate storage tank is provided in Enclosure 3.



PG&E makes one commitment in revised LRA Table A4-1, License Renewal Commitments, shown in Enclosure 2. Additional revisions to LRA Chapters 2 and 3 Tables regarding the fire water storage and transfer tank intended functions will be made as part of the annual update, which is currently scheduled for December 2010.

If you have any questions regarding this response, please contact Mr. Terence L. Grebel, License Renewal Project Manager, at (805) 545-4160.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 27, 2010.

Sincerely,

James R. Becker
Site Vice President

TLG/50347309

Enclosures

cc: Diablo Distribution
cc/enc: Elmo E. Collins, NRC Region IV Regional Administrator
Nathanial B. Ferrer, NRC Project Manager, License Renewal
Kimberly J. Green, NRC Project Manager, License Renewal
Fred Lyon, NRC Project Manager, Office of Nuclear Reactor Regulation
Michael S. Peck, NRC Senior Resident Inspector
Alan B. Wang, NRC Project Manager, Nuclear Reactor Regulation

**PG&E Response to NRC Letter dated September 29, 2010,
Summary of Telephone Conference Call Held on August 31, 2010,
Concerning Responses to Requests for Additional Information (Sets 2 and 13)
Related to the Diablo Canyon License Renewal Application**

RAI 2.3.3.5-1

In its August 17, 2010, response to RAI 2.3.3.5-1, the applicant added additional components to the scope of license renewal for 10 CFR 54.4(a)(2) related to the firewater tank. However, the staff was unclear why the firewater tank was not revised to be in scope under 10 CFR 54.4(a)(1).

Discussion:

Pacific Gas and Electric (PG&E) agreed to supplement its response to RAI 2.3.3.5-1 to clarify whether the firewater tank is in scope for 10 CFR 54.4(a)(1), and provide an evaluation of piping attached to the tank to ensure appropriate endpoints are established in accordance with the applicant's stated methodology.

PG&E Response to RAI 2.3.3.5-1

The fire water storage and transfer tank (FWSTT) are two coaxial tanks connected by a common dome roof, with the storage tank being the inner tank and the transfer tank being the outer tank. Both inner and outer tanks are Diablo Canyon Power Plant Design Class I and meet Seismic Category I criteria. Design changes were made to the condensate storage tanks to eliminate reliance on the storage tank for additional seismically-qualified feedwater supply. Therefore, the FWSTT no longer performs a safety-related licensing basis function. Reference Amendment No. 204 to Facility Operating License No. DPR-80 and Amendment No. 205 to Facility Operating License No. DPR-82 for the Diablo Canyon Power Plant, Unit Nos. 1 and 2, dated March 30, 2009. The storage tank performs a license renewal 10 CFR 54.4(a)(3) intended function for fire protection. The FWSTT also provides a source of water for long-term cooling and are within scope of license renewal based on the criterion of 10 CFR 54.4(a)(2).

To ensure the (a)(3) intended functions, the nonsafety-related (NSR) lines connected to the storage tank up to and including the first NSR isolation valve are in scope for (a)(3). These lines and valves are highlighted green for (a)(3) on the associated boundary drawings but they are also within scope of license renewal for spatial interaction based on the criterion of 10 CFR 54.4(a)(2) (LR-DCPP-16-106716-16 and LR-DCPP-18-106718-06). A note has been added to Boundary Drawings LR-DCPP-16-106716-16 and LR-DCPP-18-106718-06 to clarify that the FWSTT is not in scope for (a)(1).

See amended License Renewal Application (LRA) Sections 2.3.3.5 and 2.4.13 in Enclosure 2, which indicates that the FWSTT performs an (a)(2) and (a)(3) license renewal intended function. Additional revisions to LRA Chapters 2 and 3 Tables regarding the FWSTT intended functions will be made as part of the annual update, which is currently scheduled for December 2010.

RAI 2.3.3.5-4

In its August 17, 2010, response to RAI 2.3.3.5-4, the applicant provided an explanation for their selection of endpoints for various license renewal boundaries. However, the staff was unclear how the seismic anchors for non safety-related connections to the condensate storage tank, firewater storage tank, and primary storage tank were established.

Discussion:

PG&E agreed to supplement its response to RAI 2.3.3.5-4 to clarify how appropriate endpoints were established based upon criteria in the applicant's stated methodology.

PG&E Response to RAI 2.3.3.5-4

See response to Request for Additional Information (RAI) 2.3.3.5-1 for details on the firewater storage tank.

As discussed in response to RAI 2.3.3.5-1 above, the fire water storage and transfer tank (FWSTT) no longer provides a safety-related (SR) licensing basis function and is not in scope for (a)(1). Nonsafety-related (NSR) lines connected to the transfer tank are in scope for (a)(2) for long-term cooling. The NSR lines up to and including the first isolation valve connected to the transfer tank are also in scope for (a)(3) for fire protection. This removes the need to provide equivalent anchors on NSR piping attached to the tank because it no longer provides an (a)(1) SR intended function. A note has been added to Boundary Drawings LR-DCPP-16-106716-16 and LR-DCPP-18-106718-06 to clarify that the FWSTT is not in scope for (a)(1). It is our understanding that by the term "primary storage tank," the NRC staff was referring to the transfer tank.

See amended License Renewal Application (LRA) Sections 2.3.3.5 and 2.4.13 in Enclosure 2, which indicate that the transfer tank performs (a)(2) and (a)(3) intended license renewal functions. Additional revisions to LRA Chapters 2 and 3 Tables regarding the FWSTT intended functions will be made as part of the annual update, which is currently scheduled for December 2010.

The condensate storage tanks (CSTs) are Design Class I tanks, meet the Seismic Category I criteria, and are in scope for (a)(1). In addition, the CSTs are in scope for (a)(3) station blackout (SBO) and fire protection.

To ensure the SBO and fire protection intended functions, the NSR lines connected to the CSTs up to and including the first NSR isolation valve are in scope for (a)(3). These lines and valves are highlighted green for (a)(3) on the associated boundary drawings (LR-DCPP-16-106716-16, and LR-DCPP-16-106716-17).

The CSTs are shown on two boundary drawings, LR-DCPP-16-106716-16 (U1 CST) and LR-DCPP-16-106716-17 (U2 CST). See Enclosure 3 for the CST schematic diagram which shows the lines connected to the CST. The schematic diagram shows: (1) CST nozzle numbers, (2) SR and NSR lines connected to the CSTs, (3) the extent of connecting lines in scope for (a)(3), and (4) the function of each connected line. A note has been added to Boundary Drawings LR-DCPP-16-106716-16 and LR-DCPP-16-106716-17 to clarify that the NSR lines attached to the modified plenum nozzles of the CSTs do not require equivalent anchors.

As discussed in the response to RAI 2.3.3.5-02 (PG&E Letter DCL-10-104 dated August 17, 2010) internal plenums are installed around any nonseismically qualified tank connections in the required usable volume region. There are a total of four Diablo Canyon Power Plant Class II / Category II NSR lines attached to the CST at nozzles 2, 3, 11 and 14. Internal plenums are installed on CST nozzles N2, N11, and N14 (reference Line Valves 676, 704, and 675 respectively). The plenums preclude the need to extend the boundary of the seismic evaluation on the connected NSR lines beyond the tank nozzles. This constitutes an exception to the guidance provided in NEI 95-10, Appendix F, Revision 6, for equivalent anchors on NSR piping attached to SR systems, structures, and components. The CST plenums are a plant-specific design feature to ensure that the usable volume of the CST is maintained even if NSR attached piping were to fail. The NRC has approved this modified design (Reference Amendment No. 204 to Facility Operating License No. DPR-80 and Amendment No. 205 to Facility Operating License No. DPR-82 for the Diablo Canyon Power Plant, Unit Nos. 1 and 2, dated March 30, 2009) recognizing that NSR piping attached to the tank could fail and that if it did fail it would not adversely affect the SR intended function of the tank. Therefore, taking exception to the NEI guidance is considered acceptable based on a plant-specific design feature that is approved by the NRC.

CST nozzle 3 was not modified to increase the usable reserved inventory of the CSTs and does not have a Class I plenum attached. The line attached to Nozzle 3 has seismic bracing above and below the first isolation valve (MU-1-681 / MU-2-681). The entire line from nozzle 3 to the downstream support for the first isolation valve has been evaluated to demonstrate that the piping will withstand a seismic event without failure. Based on this evaluation, an equivalent seismic anchor exists at the valve location.

In the July 20, 2010, letter from the NRC to PG&E containing RAI 2.3.3.5-04, PG&E was asked to justify four cases for establishing seismic boundaries on directly attached NSR piping to SR piping for the makeup water system. Below are responses to each case, all of which are supported by the response above.

- On license renewal boundary drawing LR-DCPP-16-106716-03 at location 30-B, the line attached to nozzle 3 has seismic bracing above and below the first isolation valve (MU-1-681 / MU-2-681). The entire line from nozzle 3 to the downstream support for the first isolation valve has been evaluated to demonstrate that the piping will withstand a seismic event without failure. Based on this evaluation an equivalent

anchor exists at the valve location.

- On license renewal boundary drawing LR-DCPP-16-106716-16 at location 168-B, there is no seismic anchor (or equivalent) based on the transfer tank not being in scope for (a)(1).
- On license renewal boundary drawing LR-DCPP-16-106716-16 where NSR piping exits the auxiliary building, no seismic anchor is required. This is because the line connects to piping connected to the transfer tank, which is not SR. The other connection of this piping goes to a drain downstream of a sample analysis panel, as shown on LR-DCPP-16-106716-14 at location 147-A.
- On license renewal boundary drawing LR-DCPP-16-106716-17 at location 178-C, no seismic anchor is required. This is because this piping is downstream of the piping connected to nozzle 3 of the CST.

RAI 2.3.3.5-5

In its August 17, 2010, response to RAI 2.3.3.5-5, the applicant provided information on the procedural mitigation methods related to the makeup to the component cooling water surge tank. However, the response was not clear with respect to whether the makeup to the spent fuel pool is addressed with a similar method.

Discussion:

PG&E agreed to supplement its response to RAI 2.3.3.5-5 to clarify the procedural mitigation methods related to the makeup to the spent fuel pool.

PG&E Response to RAI 2.3.3.5-5

The procedural mitigation methods related to the makeup to the spent fuel pool (SFP) are provided in Operating Procedures OP AP-22 (Spent Fuel Pool Abnormalities) and OP B-7:II (SFP-Normal Operation). These procedures include descriptions of alternative sources and alignments for makeup to the SFP. This procedural guidance will be enhanced to provide specific valves that need to be repositioned to provide Class I makeup to the SFP including the correct position of any normally open code break valves.

LRA Table A4-1 has been amended to include a commitment to enhance procedural guidance to provide specific valves that need to be repositioned to provide Class I makeup to the SFP including the correct position of any normally open code break valves. See amended LRA Table A4-1 in Enclosure 2.

RAI 2.3.3.6-1

In its August 17, 2010, response to RAI 2.3.3.6-1 the applicant indicated that the heat exchangers of concern were revised to be within scope of license renewal under 10 CFR 54.4(a)(2). However, the staff was unclear on the basis for why the heat exchangers were no longer designated as safety-related components which would require them to be in the scope of license renewal under 10 CFR 54.4(a)(1).

Discussion:

PG&E agreed to supplement its response to RAI 2.3.3.6-1 to clarify why the heat exchangers were no longer designated as safety-related components.

PG&E Response to RAI 2.3.3.6-1

Boundary drawings LR-DCPP-11-106711-04 and -11-107711-03 have been revised to identify a code break in the component cooling water system piping from Design Class I to Design Class II (shown on the boundary drawing where the system break flags are now shown). The boundary drawings also show that the majority of the post loss of coolant accident sampling system has been abandoned-in-place.

RAI 2.3.3.7-1

In its August 17, 2010, response to RAI 2.3.3.7-1, the applicant provided details for why solenoid valves and the tubing between both sets of solenoid valves were excluded from scope of license renewal. However the staff made the following observations:

- 1. The staff was unclear why both valves 1-PCV-19 and 1-PCV-20 were discussed in the description.*

Discussion:

The applicant indicated that the reference to 1-PCV-19, in the response, should have been 1-PCV-20. Based on the discussion, this portion of the response is clear.

- 2. The staff was unclear how appropriate endpoints were established on the non safetyrelated piping connecting to safety-related solenoid valves. The existing license renewal boundary did not include the non safety-related piping past the safety-related/non safetyrelated interface to a seismic anchor in accordance with the applicant's stated methodology.*

Discussion:

PG&E agreed to supplement its response to RAI 2.3.3.7-1 to clarify how the seismic endpoints were established.

PG&E Response to RAI 2.3.3.7-1

Three-way solenoid valve SV-526E provides the pressure boundary between the safety-related backup air supply tanks and the normal instrument air system. The two positions of solenoid valve SV-526E direct flow to valve 1-PCV-20 from either the normal instrument air system (including solenoid valves SV-526A and SV-526B) or from the backup air tanks. When solenoid valve SV-526E is positioned to one of the air sources, the other air source is isolated. Therefore, when solenoid valve SV-526E is positioned to direct flow from the backup air tanks, it acts as a pressure boundary so that a loss of air pressure in the normal instrument air system will not affect operation of valve 1-PCV-20. The backup air systems are seismically designed and qualified with seismic anchors in accordance with Diablo Canyon Power Plant design criteria and seismic design analyses. The anchor locations shown on the license renewal boundary drawings, such as LR-D CPP-25-106725-26, are representative of the design configurations. The portions of piping and valves within the scope of license renewal include the piping or tubing and valves from the code break location to the first seismic anchor.

The designs for solenoid valves SV-516A, SV-516B, SV-516E, and valve 1-PCV-19 are the same as described above.

See amended License Renewal Application Tables 2.3.3-7 and 3.3.2-7 in Enclosure 2.

LRA Amendment 22

LRA Section	RAI
Section 2.3.3.5	2.3.3.5-1 and 2.3.3.5-4
Section 2.4.13	2.3.3.5-1 and 2.3.3.5-4
Table 2.3.3-7	2.3.3.7-1
Table 3.3.2-7	2.3.3.7-1
Table A4-1	2.3.3.5-5

2.3.3.5 Makeup Water System

System Description

The makeup water system (MWS) supplies demineralized makeup water necessary for normal reactor coolant services, secondary system makeup, firewater, and miscellaneous plant uses including domestic and drinking water. The system has the capacity necessary to meet the water requirements of a cold plant shutdown and subsequent startup from cold conditions at a time later in core life.

The system includes the safety-related condensate storage tanks (CSTs). *The fire water storage and transfer tank (FWSTT) are two coaxial tanks connected by a common dome roof, with the storage tank being the inner tank and the transfer tank being the outer tank. The transfer tank is also included in the makeup water system.* ~~and firewater/transfer tank.~~ The system provides safety-related makeup water to the auxiliary feedwater system, component cooling water surge tanks, *and the spent fuel pools.* ~~and the firewater pumps header~~ *The remainder of the system is nonsafety-related.* Portions of the makeup water system *including the transfer tank* may be used to provide water for *fire protection and long term cooling.* ~~The remainder of the system is nonsafety-related.~~

The CSTs and firewater/transfer tank are located outdoors next to the fuel handling buildings. The raw water reservoirs are evaluated with the Earthwork and Yard Structures in Section 2.4.11 and are located outdoors east of the plant buildings outside the protected area. MWS piping runs throughout the plant yard and through the fuel handling, auxiliary and turbine buildings.

System Intended Functions

The makeup water system supplies demineralized water to various primary and secondary plant systems. The safety-related portions of the system include the makeup water piping to the auxiliary feedwater system, component cooling water system, *and spent fuel pool cooling system* ~~and fire protection system.~~ Therefore, the makeup water system is within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(1).

Portions of the makeup water system located in the turbine, fuel handling and auxiliary buildings have the potential for spatial interaction and as nonsafety affecting safety-related components. Portions of the makeup water system *including the transfer tank* may be used to provide water for long term cooling. Therefore, portions of the system are within scope of license renewal based on the criterion of 10 CFR 54.4(a)(2).

Portions of the makeup water system support fire protection and SBO requirements and are within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(3).

2.4.13 Outdoor Water Storage Tank Foundations and Encasements

Structure Intended Functions

The function of the RWST *and*, CST, ~~and FWSTT~~ foundations, concrete encasements, and vaults is to provide structural support and missile protection for the tank liners. The RWST *and*, ~~the CST, and the firewater tank portion of the FWSTT~~ are safety-related and required for safe shutdown. Therefore, the *RWST and CST* ~~outdoor~~ water storage tank foundations and encasements are within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(1).

The Transfer Tank/Fire Water Storage Tank (FWSTT) provides a source of water for long term cooling and are within scope of license renewal based on the criterion of 10 CFR 54.4(a)(2). ~~The FWSTT foundation provides structural support for nonsafety-related SSCs whose failure could prevent performance of a safety-related function.~~ Therefore, the FWSTT foundation is within the scope of license renewal based on the criterion of 10 CFR 54.4(a)(2).

The RWST and CST encasements provide fire barriers to protect the safety-related tanks. The FWSTT foundation and encasement provides structural support *and protection* for the fire water tank, which is required for fire protection. The CST foundation provides support for SSCs required for SBO. Therefore, these structures are within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(3).

Table 2.3.3-7 Compressed Air System

Component Type	Intended Function
Tubing	Pressure Boundary <i>Structural Integrity (attached)</i>
Valve	Leakage Boundary (spatial) Pressure Boundary <i>Structural Integrity (attached)</i>

Table 3.3.2-7 Auxiliary Systems – Summary of Aging Management Evaluation – Compressed Air System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Piping	PB, SIA	Copper Alloy	Plant Indoor Air (Int)	Loss of material	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)	VII.G-9	3.3.1.28	E, 3
Regulators	PB	Copper Alloy	Plant Indoor Air (Int)	Loss of material	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)	VII.G-9	3.3.1.28	E, 3
<i>Tubing</i>	<i>PB, SIA</i>	<i>Copper Alloy</i>	<i>Atmosphere/ Weather (Ext)</i>	<i>Loss of material</i>	<i>External Surfaces Monitoring Program (B2.1.20)</i>	<i>None</i>	<i>None</i>	<i>G</i>
<i>Tubing</i>	<i>PB, SIA</i>	<i>Copper Alloy</i>	<i>Plant Indoor Air (Ext)</i>	<i>None</i>	<i>None</i>	<i>VIII.I-2</i>	<i>3.4.1.41</i>	<i>A</i>
<i>Tubing</i>	<i>PB, SIA</i>	<i>Copper Alloy</i>	<i>Plant Indoor Air (Int)</i>	<i>Loss of material</i>	<i>Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)</i>	<i>VII.G-9</i>	<i>3.3.1.28</i>	<i>E, 3</i>
<i>Tubing</i>	<i>PB, SIA</i>	<i>Stainless Steel</i>	<i>Atmosphere/ Weather (Ext)</i>	<i>Loss of material</i>	<i>External Surfaces Monitoring Program (B2.1.20)</i>	<i>None</i>	<i>None</i>	<i>G</i>
Tubing	PB, SIA	Stainless Steel	Plant Indoor Air (Ext)	None	None	VII.J-15	3.3.1.94	A
Tubing	PB, SIA	Stainless Steel	Plant Indoor Air (Int)	Loss of material	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)	VII.D-4	3.3.1.54	E, 3
Valve	PB, SIA	Copper Alloy	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring Program (B2.1.20)	None	None	G
Valve	PB, SIA	Copper Alloy	Plant Indoor Air (Ext)	None	None	VIII.I-2	3.4.1.41	A

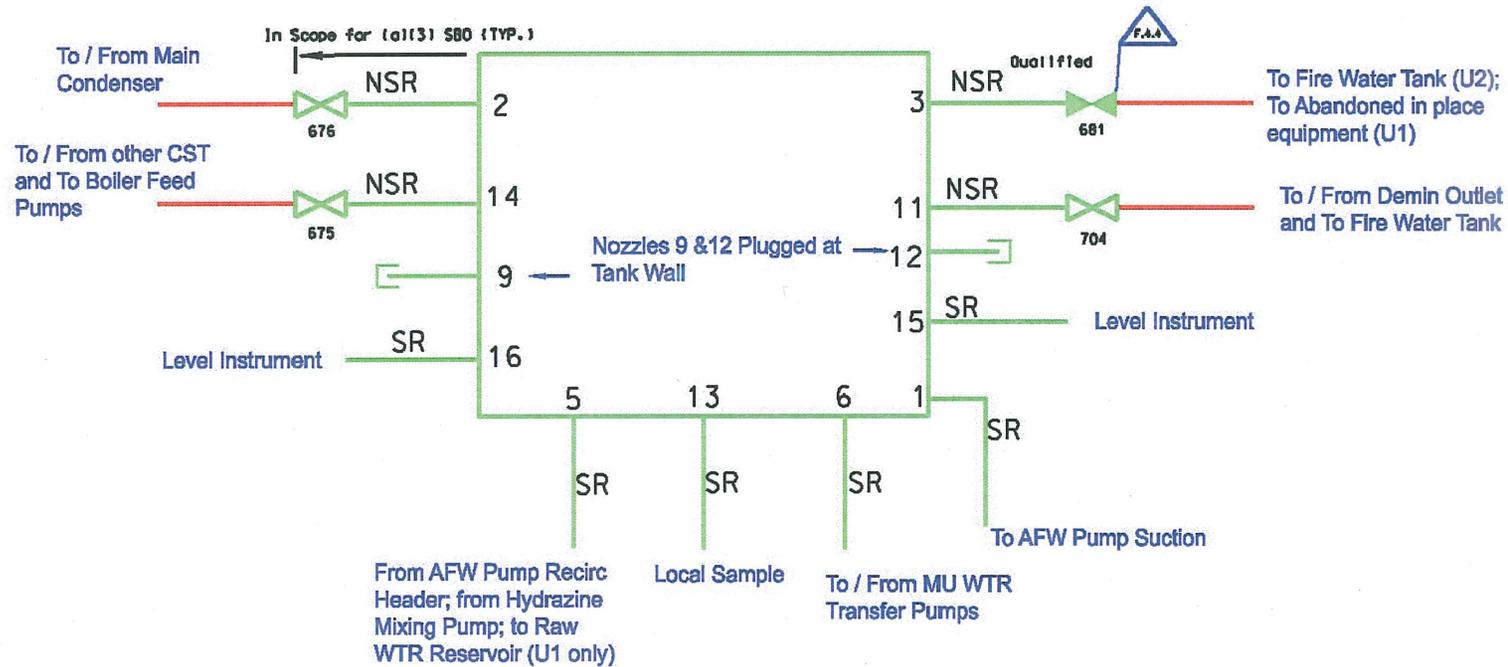
Table 3.3.2-7 Auxiliary Systems – Summary of Aging Management Evaluation – Compressed Air System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve	PB, <i>SIA</i>	Copper Alloy	Plant Indoor Air (Int)	Loss of material	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)	VII.G-9	3.3.1.28	<i>E, 3</i>
Valve	PB, <i>SIA</i>	Stainless Steel	Atmosphere/ Weather (Ext)	Loss of material	External Surfaces Monitoring Program (B2.1.20)	None	None	<i>G</i>
Valve	LBS, PB, <i>SIA</i>	Stainless Steel	Plant Indoor Air (Ext)	None	None	VII.J-15	3.3.1.94	<i>A</i>
Valve	PB, <i>SIA</i>	Stainless Steel	Plant Indoor Air (Int)	Loss of material	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)	VII.D-4	3.3.1.54	<i>E, 3</i>

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
50	Procedures will be enhanced to provide specific valves that need to be repositioned to provide Class I makeup to the spent fuel pool including the correct position of any normally open code break valves. Reference PG&E Letter DCL-10-133	2.3.3.5	03/01/2011

CST Schematic (U1 and U2) with Nozzle numbers



Green is (a)(1) or (a)(3)
 Red is (a)(2) Spatial Interaction
 SR is safety-related, Design Class I.
 Nozzles 2, 6, 11 and 14 have plenums. Nozzle 3 is connected to a Class II (NSR) line that has been evaluated to withstand a seismic event without failure.

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