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AUTH. NAME AUTHOR AFFILIATION
SHIFFER, J. D. Pacific Gas & Electric Co.
RECIP. NAME RECIPIENT AFFILIATION
VARGA, S. A. PWR Project Directorate 3

SUBJECT: Forwards Rev 4 to "Diablo Canyon Unit 1 Inservice Insp & Testing Program Plan" & Rev 1 to "Diablo Canyon Unit 2 Inservice Insp & Testing Program Plan." Response to SSER 31 & justification for changes also encl.

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PG&E — 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

JAMES D. SHIFFER
VICE PRESIDENT
NUCLEAR POWER GENERATION

August 12, 1986

PGandE Letter No.: DCL-86-238

Mr. Steven A. Varga, Director
PWR Project Directorate No. 3
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Revisions to Inservice Inspection and Testing Program Plan

Dear Mr. Varga:

Enclosed are revisions to the Inservice Inspection and Testing (ISI and IST) Program Plans for DCPP Units 1 and 2. Enclosure 1 contains one controlled copy of Revision 4 to the Unit 1 ISI and IST Program Plan. Enclosure 2 contains one controlled copy of Revision 1 to the Unit 2 ISI and IST Program Plan. Please acknowledge receipt of these controlled copies by signing the forms in Enclosures 1 and 2 and returning them to the indicated address.

DCPP Unit 1 Inservice Inspection Program Plan

The ISI portion of the Unit 1 Program Plan has been revised to (a) correct typographical errors, (b) add relief request NDE-012 regarding inside radius examinations for integrally cast nozzles associated with the steam generator channel head and the pressurizer, as committed to in PGandE letter DCL-86-101 dated April 14, 1986, and (c) clarify relief requests NDE-006, NDE-007, and NDE-008 as requested by the NRC Staff in phone conferences on July 17, 24, and 29, 1986. Revision bars have been added to indicate changes.

PGandE requests a timely review and approval of Unit 1 relief requests NDE-002, NDE-005, NDE-006, NDE-007, and NDE-008 as they are applicable for items scheduled for examination during the first refueling outage of Unit 1.

DCPP Units 1 and 2 Inservice Testing Program Plan

The IST portions of the Unit 1 and Unit 2 Program Plans have been revised in total to correct typographical errors, and, as discussed below, to incorporate miscellaneous changes and resolutions to SSER 31 items. These revisions are structured to create a common DCPP Units 1 and 2 IST Program Plan for pumps and valves. Because the NRC Staff has previously reviewed the Unit 1 IST Program Plan (SSER 31), revision bars have been added to the common Program Plan to indicate changes.

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Enclosure 3 provides PGandE's responses and resolutions to NRC Staff IST items documented in SSER 31 (April 1985). PGandE's resolutions to these SSER 31 items are in accordance with suggestions made by the NRC Staff in a meeting on November 4, 1985, in Bethesda, Maryland (as noted in H. Schierling's (NRC) meeting summary dated December 9, 1985) and in a phone conference on December 6, 1985. Where appropriate, PGandE's resolutions to these SSER 31 items are incorporated into the DCPP Units 1 and 2 IST Program Plan. Modifications to install flow measurement devices (SSER 31, item 4) will be completed on Units 1 and 2 prior to startup following the first refueling outage of each unit.

The DCPP Units 1 and 2 IST Program Plan also incorporates miscellaneous changes that are not related to the SSER 31 resolutions. Justification for these additional changes is provided in Enclosure 4.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

Enclosures:

Enclosure 1 - DCPP Unit 1 Inservice Inspection and Testing Program Plan, Revision 4 (Controlled Copy No. 30 for NRC Library)
Enclosure 2 - DCPP Unit 2 Inservice Inspection and Testing Program Plan, Revision 1 (Controlled Copy No. 61 for NRC Library)
Enclosure 3 - Response to SSER 31 Items Regarding DCPP Units 1 and 2 IST Program Plan
Enclosure 4 - Justification for Additional Changes to DCPP Units 1 and 2 IST Program Plan

cc w/encs: G. D. Horn, State of California Division of Industrial Safety
(Enclosure 1 - Controlled Copy No. 18)
(Enclosure 2 - Controlled Copy No. 66)
C. Tahnk , Regional Manager, Hartford Steam Boiler
(Enclosure 1 - Controlled Copy No. 26)
(Enclosure 2 - Controlled Copy No. 20)
H. E. Schierling
(Enclosure 2 - Controlled Copies No. 62 and No. 63)
B. W. Brown
(Enclosure 1 - Controlled Copy No. 31)

cc w/o encs: L. J. Chandler
J. B. Martin
M. M. Mendonca
B. Norton
CPUC
Diablo Distribution

0935S/0047K/JHA/469

PGandE Letter No.: DCL-86-238

ENCLOSURE 3

Response to SSER 31 Items Regarding DCPP
Units 1 and 2 IST Program Plan

ENCLOSURE 3

Response to SSER 31 Items Regarding DCPP
Units 1 and 2 IST Program Plan

SSER 31, Section 5.2.8.1, contains the NRC Staff's evaluation of the Diablo Canyon Unit 1 Inservice Testing (IST) Program Plan, Revision 1, for pumps and valves. As a result of this evaluation, the NRC Staff has identified 11 items in SSER 31 that require a response and/or clarification by PGandE. Enclosure 3 provides PGandE's response and resolution to these 11 items and is applicable to Units 1 and 2. PGandE's resolutions to these SSER 31 items are in accordance with agreements made with the NRC Staff in a meeting on November 4, 1985 (as noted in H. Schierling's (NRC) meeting summary dated December 9, 1985) and in a phone conference on December 6, 1985. Where appropriate, PGandE's resolutions to these SSER 31 items are incorporated into the common DCPP Units 1 and 2 IST Program Plan. This common plan is included in the Unit 1 ISI and IST Program Plan, Revision 4, and the Unit 2 ISI and IST Program Plan, Revision 1.

Enclosure 3 is organized as follows for the 11 SSER 31 items:

1. A statement of PGandE's original IST request for relief and the NRC Staff's evaluation and recommendation, as presented in SSER 31, Section 5.2.8.1.

2. PGandE's response to the NRC Staff's evaluation.

1. Inspection of Safety Injection Check Valves

SSER 31, Section 5.2.8.1, Item 1

Original Relief Request:

PGandE has requested specific relief from exercising safety injection accumulator discharge check valves 8956A, 8956B, 8956C, and 8956D in accordance with the requirements of Section XI of the code. As an alternate, PGandE has proposed partial-stroke exercising these check valves during refueling outages. The basis for requesting relief is that the check valves cannot be exercised during power operation because the accumulators do not develop sufficient head to overcome reactor coolant system pressure. The check valves cannot be exercised during cold shutdown because this could result in a low temperature overpressurization of the reactor coolant system. Full stroke testing of the check valves during refueling outages is not feasible because of the resulting water surge into the reactor vessel and potential for high airborne radiological contamination. The check valves are not equipped with mechanical exercisers, position indicators or differential pressure instrumentation and cannot be isolated or visually inspected.

NRC Staff Evaluation:

The NRC staff agrees with the PGandE bases for requesting relief for check valves 8956A, 8956B, 8956C, and 8956D. However, it is the NRC staff position that the proper operability of the check valves cannot be assured unless they are exercised at full-stroke. Accordingly, the requested relief from the exercising requirements of Subsection IWV of Section XI of the ASME Code for safety injection accumulator discharge check valves 8956A, 8956B, 8956C, and 8956D is denied. In the absence of an acceptable full stroke verification proposal, the staff requires that one of these four check valves be disassembled on a rotating schedule, a different one at each refueling outage, in order to verify operational readiness. If any degradation is detected that would interfere with the operation of the valve, then the other three valves must also be disassembled, inspected, and, if necessary, repaired before the unit returns to operation.

PGandE Response

Relief request no. 12 of the Diablo Canyon Units 1 and 2 IST Program Plan (for valves) regarding testing of accumulator check valves 8956A, 8956B, 8956C, and 8956D has been revised to require disassembly of one of the four check valves on a rotating basis each refueling outage. An inspection of the internals will be made to verify the operational readiness of the valve. If degradation is identified that would interfere with the ability of the valve to perform its design function as determined by the plant staff, the other three valves will also be disassembled for inspection and, if necessary, repaired before the unit is returned to operation.

2. Vibration Measurement of Pumps

SSER 31, Section 5.2.8.1, Item 3

Original Relief Request:

PGandE has requested specific relief from the testing requirement of measuring displacement vibration amplitude for all pumps in the IST program, and as an alternate has proposed measuring vibration velocity for these pumps. The basis for requesting relief is that velocity is a better indication of vibration severity because it accounts for both the displacement of the vibration and the rate or frequency of displacement. Both of these parameters must be considered when determining the susceptibility to malfunction resulting from fatigue.

NRC Staff Evaluation:

The staff agrees with the basis for requesting relief in that vibration velocity measurements are superior to displacement vibration amplitude measurements for monitoring pump degradation; however, the PGandE proposed acceptance criteria for the vibration velocity measurements are not adequate to ensure proper corrective actions are taken if pump degradation occurs. Accordingly, the requested relief from the testing requirements of measuring displacement vibration amplitude for all pumps in the IST program is granted and the PGandE alternate proposal of using vibration velocity measurements for all pumps in the IST program shall be used. However, since the acceptance criteria proposed by PGandE is not acceptable to the NRC staff, the acceptance criteria as listed in Table 5.1 of this report shall be used in place of that proposed by PGandE. The IST program shall be revised accordingly.

PGandE Response

After reviewing Table 5.1 of SSER 31, PGandE has determined that the vibration limits recommended by the NRC Staff are significantly more limiting than those required by ASME Section XI. As such, PGandE has withdrawn this relief request from the Diablo Canyon Units 1 and 2 IST Program Plan (for pumps) and will record vibration data in units of displacement in accordance with ASME Section XI.

3. Measurement of Pump Flow Rate

SSER 31, Section 5.2.8.1, Item 4

Original Relief Request:

PGandE has requested specific relief from measuring the flow rate for the centrifugal charging pumps, auxiliary feedwater pumps, diesel fuel oil transfer pumps, boric acid transfer pumps, and makeup water transfer pumps in accordance with the requirements of Section XI of the code. The PGandE basis for requesting relief is that instrumentation for measurement of pump flow rate is not provided in the present system design. The only parameter proposed by PGandE for monitoring is any change in pump performance by observing changes in differential pressure while the pumps are being tested in a fixed resistance configuration.

NRC Staff Evaluation:

It is the staff position that monitoring pump differential pressure while the pumps are being tested in a fixed resistance configuration may not adequately monitor the hydraulic characteristics of these pumps and, therefore, detect possible pump degradation. Accordingly, the requested relief from the requirements of Subsection IWP of Section XI of the ASME Code is denied. The staff requires PGandE to modify the applicable systems to permit measuring pump flow rate in accordance with the requirements of Section XI of the code. PGandE is required to make these modifications prior to startup after the first refueling outage. For the period of the first fuel cycle, interim relief is given to test the pumps as proposed by PGandE. The pumps will be monitored on a quarterly basis for differential pressure and vibration velocity. The staff has concluded that requiring PGandE install the flow measuring instrumentation prior to startup of the plant would impose unnecessary hardships on PGandE without a compensating increase in the level of safety. Taking into account the inservice tests that will be performed and the relatively short operational times that the pumps have been subjected to for Unit 1 to date, we find that this interim relief will have no adverse effect on the health and safety of the public.

PGandE Response

PGandE has withdrawn this relief request from the DCPP Units 1 and 2 IST Program Plan (for pumps) and has initiated system design changes to install flow measurement instrumentation for the auxiliary feedwater pumps, diesel fuel oil transfer pumps, boric acid transfer pumps and makeup water transfer pumps. The modifications will be completed on Units 1 and 2 prior to startup following the first refueling outage of each unit.

Measuring flow for the centrifugal charging pumps in accordance with the requirements of Section XI (IWP) will be accomplished by utilizing existing flow instrumentation in the normal charging flow path.

Relief request no. 5 has been added in the Diablo Canyon Units 1 and 2 IST Program Plan (for pumps) to change the accuracy requirement for boric acid transfer pump flow measuring instrumentation from $\pm$2% of full scale to $\pm$10% of full scale. This request is based on the accuracy of available instrumentation for measuring pump flow in a boric acid system.

Relief requests nos. 6 and 7 have been added in the Diablo Canyon Units 1 and 2 IST Program Plan (for pumps) to change the accuracy requirement for the diesel fuel oil transfer pumps and makeup water transfer pumps flow measuring instrumentation from $\pm$2% of full scale to $\pm$5% of full scale. This request is based on the accuracy of available instrumentation.

All pumps will be monitored for vibration displacement instead of vibration velocity.

4. Testing of Diesel Fuel Oil Day Tank Isolation Valves*

SSER 31, Section 5.2.8.1, Item 7

NRC Staff Evaluation:

PGandE has stated in the IST program that isolation valves LCV-85, LCV-86, LCV-87, LCV-88, LCV-89, and LCV-90 in the diesel fuel oil day tank supply lines will be full stroke exercised at cold shutdown rather than at a quarterly frequency in accordance with the requirements of Subsection IWV of Section XI of the ASME Code. PGandE has provided no technical justification for not full-stroke exercising these valves quarterly. Accordingly, in the absence of an acceptable basis for not testing the valves in accordance with the ASME Code, the staff requires that isolation valves LCV-85, LCV-86, LCV-87, LCV-88, LCV-89, and LCV-90 shall be full stroke exercised quarterly, in accordance with the requirements of Subsection IWV of Section XI of the ASME Code.

PGandE Response

The Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to require full-stroke exercising of the diesel fuel oil tank supply valves LCV-85, LCV-86, LCV-87, LCV-88, LCV-89, and LCV-90 on a quarterly frequency in accordance with the requirements of Subsection IWV of Section XI of the ASME Code.

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* This item was not originally proposed as a formal relief request.

5. Testing of Containment Air Sample Isolation Check Valve

SSER 31, Section 5.2.8.1, Item 8

Original Relief Request:

PGandE has requested specific relief from exercising normally closed containment isolation check valve VAC-116, located inside containment, in the containment air sample post-LOCA return line, in accordance with the requirements of Section XI of the code. As an alternate, PGandE has proposed verifying closure of this valve at a two year interval when it is leakrate tested. The basis for requesting is that due to the plant design, this valve is not equipped with valve position indication and some of the required test connections are located inside containment.

NRC Staff Evaluation:

The staff agrees with the basis for requesting relief for check valve VAC-116. Accordingly, the requested relief from the exercising requirements of Subsection IWV of Section XI of the ASME Code for check valve VAC-116 is granted and PGandE shall verify closure of this check valve at a two year interval when it is leakrate tested. In addition to the above, the NRC staff has determined that check valve VAC-116 also performs a safety function in the open position during a post loss-of-coolant accident condition which has not been addressed by PGandE in Revision 1 of the IST program. Therefore, the staff requires that check valve VAC-116 be exercised to the full open position during the containment leakrate test.

PGandE Response

Exercising of check valve VAC-116 to the full open and full closed position is performed concurrently with the biannual leakrate testing of VAC-116 and results are documented in Surveillance Test Procedure STP V-682.

6. Inspection of Auxiliary Feedwater Check Valves

SSER 31, Section 5.2.8.1, Item 9

Original Relief Request:

PGandE has requested specific relief from exercising auxiliary feedwater check valves FW-349 and FW-353 in the suction lines from the raw water storage reservoir, in accordance with the requirements of Section XI of the code. As an alternate, PGandE has proposed disassembly of these valves and inspection of the internals to demonstrate proper valve operability at a frequency of once every five years. The PGandE basis for requesting relief is that exercising these valves with flow from the raw water storage reservoir would contaminate the steam generators, creating chemistry control problems which could affect the integrity of the steam generator tubes.

NRC Staff Evaluation:

The staff agrees with the basis for requesting relief for check valves FW-349 and FW-353. Accordingly, the requested relief from the exercising requirements of Subsection IWV of Section XI of the ASME Code for check valves FW-349 and FW-353 is granted. However, the staff cannot currently justify an inspection interval longer than each refueling outage for these check valves. Therefore, in order to provide an acceptable inspection interval for check valves FW-349 and FW-353, the staff requires that one of these two check valves be disassembled on a rotating schedule, a different one at each refueling outage, in order to verify operational readiness. If any degradation is detected that would interfere with the operation of the check valve, then the other check valve must also be disassembled, inspected, and, if necessary, repaired before the plant returns to operation.

PGandE Response

Relief request no. 1 in the Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to require disassembly of auxiliary feedwater suction check valves FW-349 and FW-353 on an alternating basis, a different valve at each refueling outage. An inspection of the internals will be made to verify the operational readiness of the valve. If degradation is identified that would interfere with the ability of the valve to perform its design function as determined by the plant staff, the other valve will also be disassembled for inspection. Necessary repairs will be completed before the unit is returned to operation.

7. Inspection of Main Steam Check Valves

SSER 31, Section 5.2.8.1, Item 10

Original Relief Request:

PGandE has requested specific relief from exercising main steam line check valves MS-1068, MS-2066, MS-3062 and MS-4062 in accordance with the requirements of Section XI of the code. As an alternate, PGandE has proposed disassembly of these valves and inspection of the internals to demonstrate proper valve operability at a frequency of once every five years. The PGandE basis for requesting relief is that due to the current plant design there is no means available to verify closure of these valves.

NRC Staff Evaluation:

The staff agrees with the basis for requesting relief for check valves MS-1068, MS-2066, MS-3062 and MS-4062. Accordingly, the requested relief from the exercising requirements of Subsection IWV of Section XI of the ASME Code for these check valves is granted. However, the staff cannot currently justify an inspection interval longer that each refueling outage for these valves. In order to verify operational readiness and to provide an acceptable inspection interval for the check valves, the staff requires that one of these four check valves be disassembled on a rotating schedule, a different one at each refueling outage, in order to verify operational readiness. If any degradation is detected that would interfere with the operation of the check valve, then the other three valves must also be disassembled, inspected, and, if necessary, repaired before the unit returns to operation.

As an alternate to disassembly of the check valves, PGandE has proposed modifying drain lines on the bottom of each valve to allow a Fiberscope to be inserted into the valve to inspect the internal condition and verify the valve disc is in the closed position. This Fiberscope examination would be performed on each individual valve during a refueling outage. The NRC staff finds this alternate method of inspection acceptable.

Therefore, in order to demonstrate operability of main steam line check valves MS-1068, MS-2066, MS-3062, and MS-4062, the staff requires PGandE to either disassemble and inspect the internals of the check valves on a rotating schedule as discussed above or

perform a Fiberscope examination of the check valves. PGandE shall inform the staff which inspection method is to be used and the IST program shall be revised as appropriate.

PGandE Response

Relief request no. 2 in the DCPP Units 1 and 2 IST Program Plan (for valves) has been revised to require that the operability of main steam line check valves MS-1068, MS-2066, MS-3062, and MS-4062 be verified by a Fiberscope inspection on a refueling outage basis.

8. Inspection of Containment Spray Header Isolation Check Valves

SSER 31, Section 5.2.8.1, Item 11

Original Relief Request:

PGandE has requested specific relief from exercising containment spray header isolation check valves 9011A and 9011B, located inside containment, in accordance with the requirements of Section XI of the code. As an alternate, PGandE has proposed disassembly of these valves and inspection of the internals to demonstrate proper valve operability at a frequency of once every five years. The basis for requesting relief is that the valves cannot be exercised during any phase of plant operation because flow through the valves would result in spraying down the containment. This may cause problems within the containment, such as corrosion of components with wet lagging.

NRC Staff Evaluation:

The staff agrees with the PGandE basis for requesting relief for check valves 9011A and 9011B. Accordingly, the requested relief from the exercising requirements of Subsection IWV of Section XI of the ASME Code for check valves 9011A and 9011B is granted. However, the staff cannot currently justify an inspection interval longer than each refueling outage. In order to verify operational readiness and to provide an acceptable inspection interval for check valves 9011A and 9011B, the staff requires disassembly of one of these two check valves on a rotating schedule, at each refueling outage. If any degradation is detected that would interfere with the operation of the check valves, then the other check valve must also be disassembled, inspected, and, if necessary, repaired before the plant returns to operation.

PGandE Response

Relief request no. 18 in the Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to require disassembly of valves 9011A and 9011B, on an alternating basis, one valve each refueling outage. If any degradation is detected that would interfere with the valve's operability, as determined by the plant staff, the opposite train valve will also be disassembled and inspected, and, if necessary, repaired before the unit is returned to operation.

9. Testing of Diesel Air Start System Valves*

SSER 31, Section 5.2.8.1, Item 12

NRC Evaluation:

PGandE has not included any valves in the diesel air start system in the IST program. Since there is no technical justification for not testing these valves in accordance with the code requirements, the staff requires that valves in the diesel air start system that perform a safety function shall be full-stroke exercised quarterly, in accordance with the requirements of Subsection IWV of Section XI of the ASME Code.

PGandE Response

The Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to include testing of the air start valves for the emergency diesel generators. Relief request no. 5 has been added to delete the requirement for valve stroke time measurements. The valves are considered to have properly stroked within an acceptable time if the emergency diesel attains rated speed and voltage within the time limits set forth in the DCPP Technical Specifications.

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* This item was not originally proposed as a formal relief request.

10. Classification of SI/RHR Check Valves*

SSER 31, Section 5.2.8.1, Item 13

NRC Evaluation:

PGandE has classified certain check valves in the safety injection system and the residual heat removal system, which perform a pressure boundary isolation function, as Category C valves. These systems which are connected to the reactor coolant pressure boundary have design pressures that are below the reactor coolant system operating pressure. The redundant isolation check valves are within the ASME Section III, Class 1 boundary forming an interface between the high and low pressure systems and protect the low pressure systems from pressures that exceed their design limit. In this role, the check valves perform a pressure isolation function. The staff considers the redundant isolation provided by these check valves to be an important safety function and therefore it is necessary to assure the condition of each check valve is adequate to maintain the redundant isolation capability.

Accordingly, the following check valves in the safety injection system and the residual heat removal system shall be reclassified valve category A/C and tested in accordance with Technical Specification 4.4.6.2.2. and included in Table 3.4-1 of the Technical Specifications. These check valves are:

Safety Injection System (SI)
8905A SI to hot leg - 1, 8905B SI to hot leg - 2,
8905C SI to hot leg - 3, and 8905D SI to hot leg - 4.

Residual Heat Removal System (RHR)
8740A RHR to hot leg - 1, and 8740B RHR to hot leg - 2.

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* This item was not originally proposed as a formal relief request.

PGandE Response

Per NRC requirement, two series valves must be leakrate tested to ensure adequate pressure isolation between the reactor coolant system (RCS) and lower pressure support systems. For hot leg injection to the RCS from the safety injection (SI) and residual heat removal (RHR) systems, there are three series valves that can perform the pressure isolation function. These valves are as follows:

Safety Injection System

8949 A - SI to RCS Hot Leg - 1 First Off Check Valve
8949 B - SI to RCS Hot Leg - 2 First Off Check Valve
8949 C - SI to RCS Hot Leg - 3 First Off Check Valve
8949 D - SI to RCS Hot Leg - 4 First Off Check Valve

8905 A - SI to RCS Hot Leg - 1 Second Off Check Valve
8905 B - SI to RCS Hot Leg - 2 Second Off Check Valve
8905 C - SI to RCS Hot Leg - 3 Second Off Check Valve
8905 D - SI to RCS Hot Leg - 4 Second Off Check Valve

8802 A - SI to RCS Hot Legs 1 and 2 Isolation Valve
8802 B - SI to RCS Hot Legs 3 and 4 Isolation Valve

Residual Heat Removal System

8949 A - SI to RCS Hot Leg - 1 First Off Check Valve
8949 B - SI to RCS Hot Leg - 2 First Off Check Valve
8949 C - SI to RCS Hot Leg - 3 First Off Check Valve
8949 D - SI to RCS Hot Leg - 4 First Off Check Valve

8740 A - RHR to RCS Hot Leg - 1 Second Off Check Valve
8740 B - RHR to RCS Hot Leg - 2 Second Off Check Valve

8703 - RHR to RCS Hot Legs 1 and 2 Isolation Valve

As requested in SSER 31, PGandE has submitted a License Amendment Request (86-01) to modify DCPP Technical Specification 3.4.6.2 and include the above valves in Table 3.4-1 for leakrate testing. The amendment stipulates that two of the three series valves in each system must meet the Technical Specification 3.4.6.2f leakrate criteria.

The Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to (a) reclassify valves 8905A, 8905B, 8905C, 8905D, 8740A, 8740B, 8949A, 8949B, 8949C, and 8949D as category A/C valves and valves 8802A, 8802B, and 8703 as category A valves and (b) require leakrate testing of the above valves in accordance with the DCPP Technical Specifications.

11. Testing of RHR Heat Exchanger Isolation Valves

SSER 31, Section 5.2.8.1, Item 14

Original Relief Request:

PGandE has requested specific relief from measuring the stroke times of residual heat removal exchanger outlet isolation valves HCV-637 and HCV-638 in accordance with the requirements of Section XI of the code. As an alternate, PGandE has proposed to observe the smooth operation of these valves over their full range of travel during the full-stroke quarterly test. The PGandE basis for requesting relief is that these valves have no limiting value of full stroke time because they are remotely controlled by manual adjustment of a potentiometer. The stroke times of the valves are dependent on how fast the operator adjusts the potentiometers that control the opening and closing of the valves. The valves have no remote position indication.

NRC Evaluation:

It is the staff position that the stroke timing requirements of the code are a valuable inservice testing tool to assist in identifying unacceptable valve degradation or improper adjustments, packing overtightness, torque switch setting, etc., prior to complete failure of a valve assembly to perform its required function under system challenging conditions.

Accordingly, the requested relief from the requirements of Subsection IWV of Section XI of the ASME Code is denied. The staff requires PGandE to comply with the code and establish a maximum stroke time for isolation valves HCV-637 and HCV-638 and measure the stroke time of the valves each quarter at the time they are full stroke exercised.

PGandE Response

PGandE has withdrawn this relief request from the Diablo Canyon Units 1 and 2 IST Program Plan. The Program Plan has been revised to require that stroke time testing of HCV-637 and HCV-638 be performed on a quarterly basis as specified in Section XI of the ASME Code.

ENCLOSURE 4

Justification for Additional Changes to DCPP
Units 1 and 2 IST Program Plan

ENCLOSURE 4

Justification for Additional Changes to DCPP
Units 1 and 2 IST Program Plan

1. The Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to add cold shutdown testing statement no. 28. This statement provides justification for changing the exercising frequency of valves 8805A and 8805B, from quarterly to cold shutdown. Exercising these valves during power operation injects highly oxygenated, 2000 ppm boric acid from the refueling water storage tank (RWST) into the reactor coolant system (RCS) via the charging pumps. Injecting this water into the RCS is undesirable for two reasons:

   a. The RWST water is fed directly to the suction of the charging pumps and injected into the RCS. Since the water is not subjected to the hydrogen overpressure in the volume control tank, its high oxygen content is not scavenged. This causes accelerated corrosion of RCS components, particularly the charging line to RCS nozzles.

   b. Injecting the 2000 ppm boric acid from the RWST into the RCS causes a reactivity addition. This is especially of concern late in core life when the RCS boron concentration is extremely low.

   Figure 1 shows the component configuration for valves 8805A and 8805B.

2. Cold shutdown testing statement no. 2 has been revised in the Diablo Canyon Units 1 and 2 IST Program Plan (for valves) to include the steam supply check valves for the turbine driven auxiliary feedwater pump, MS-5166 and MS-5167. This statement provides justification for changing the full flow testing frequency for these valves from quarterly to cold shutdown. Full stroke exercising of the turbine driven auxiliary feedwater pump steam supply check valves requires the pump to be operating at full design flow. The only available path for full flow testing of the pump directs the auxiliary feedwater into the steam generators. Injecting this water into the steam generators at power could result in thermal shock to the associated piping and fittings and should be avoided.

   Therefore, these valves will be full stroke exercised during a shutdown to, or a startup from, a cold shutdown condition. Partial stroke exercising of these valves will continue to be performed quarterly.

3. The Diablo Canyon Units 1 and 2 IST Program Plan (for valves) has been revised to add a new makeup water system check valve, MU-1565. This valve was installed as a result of plant modifications made in response to IE Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment." The valve is in the makeup water flowpath to the component cooling water surge tank.

4. Relief request no. 8 has been added to the Diablo Canyon Units 1 and 2 IST Program Plan (for pumps) regarding instrument accuracy requirements for the reciprocating charging pumps. These pumps have a speed changer and reduction gear that reduces pump speed to approximately 185 rpm. IWP 4520(b) requires vibration instruments to be calibrated over a frequency range of one half to one times the pump operating speed. Over this frequency range, the vibration instruments would have to be calibrated for frequencies as low as 1.5 Hertz. However, existing instrumentation (i.e., low frequency probes) cannot be calibrated at frequencies below 7 Hertz. Until lower frequency vibration probes are commercially available, PGandE will use the existing low frequency probes calibrated down to 7 Hertz.

5. PGandE has withdrawn relief request no. 5 from Revision 1 of the Diablo Canyon Unit 1 IST Program Plan (for valves) regarding relief from stroking BIT inlet valves 8803A and 8803B at power. PGandE will stroke these valves quarterly in accordance with the requirements of ASME Section XI.

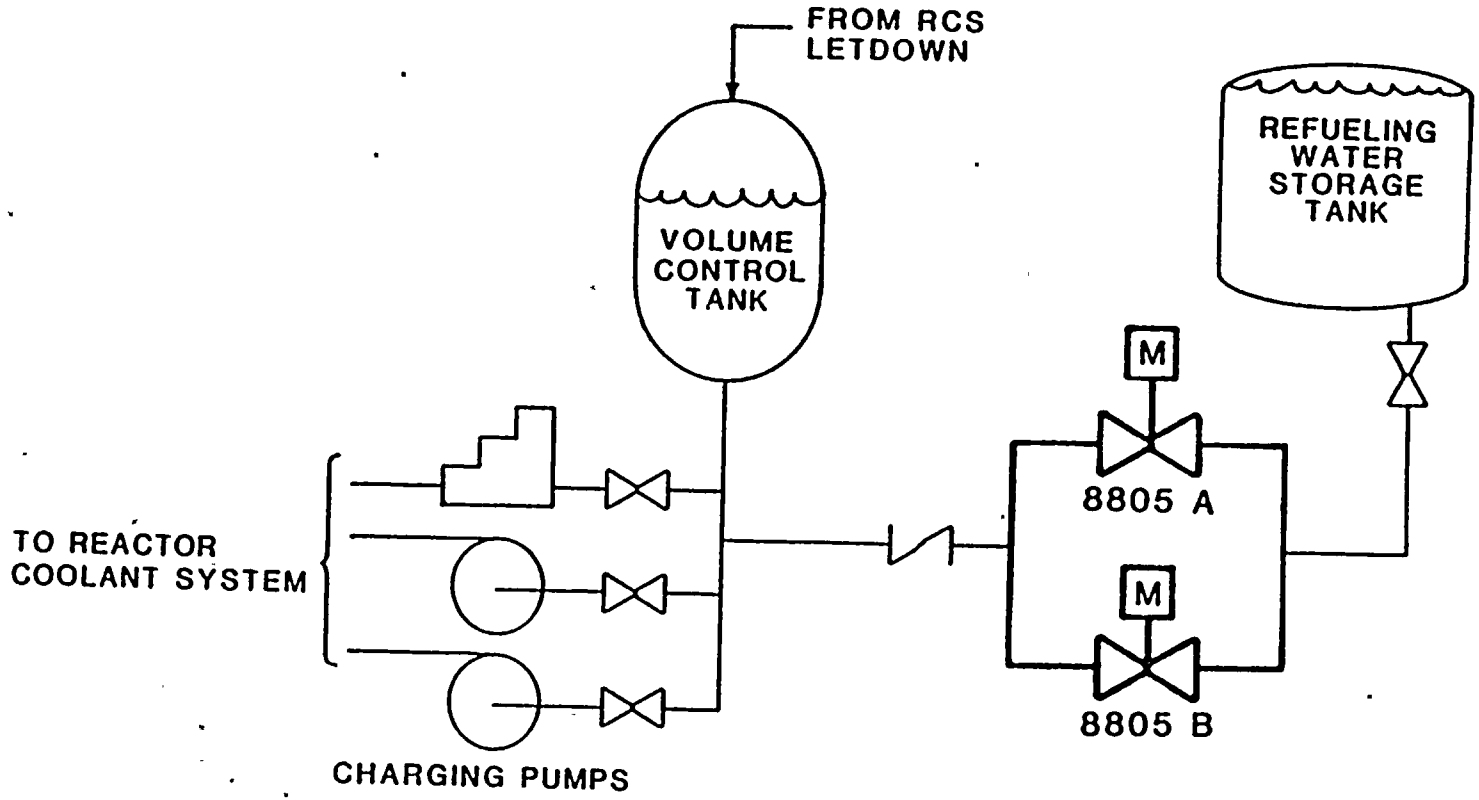
FROM RCS
LETDOWN
VOLUME
CONTROL
TANK
REFUELING
WATER
STORAGE
TANK
M
8805 A
M
8805 B
TO REACTOR
COOLANT SYSTEM
CHARGING PUMPS

FIGURE 1