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July 31, 1991

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: **Docket Nos. 50-361 and 50-362**
Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1
San Onofre Nuclear Generating Station
Units 2 and 3

- References:
1. NRC Safety Evaluation Report of the Inservice Testing Program for Pumps and Valves, San Onofre Nuclear Generating Station, Unit Nos. 2 and 3 (TAC Nos. 55120 and 55121) issued September 24, 1990.
 2. April 12, 1991, letter from F. R. Nandy (SCE) to Document Control Desk (NRC), Subject: Docket Nos. 50-361 and 50-362, Status of NRC Safety Evaluation Report, Appendix C, Items for the Inservice Testing Program for Pumps and Valves.
 3. June 19, 1991, letter from R. M. Rosenblum (SCE) to Document Control Desk (NRC), Subject: Nos. 50-361 and 50-362 Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1

The NRC evaluated and generally accepted the San Onofre Units 2 and 3 Inservice Testing (IST) Program in the Safety Evaluation Report (SER), Reference 1. To resolve the remaining open items in the SER, the NRC also requested additional information. Southern California Edison (SCE) submitted a portion of the requested information in References 2 and 3. The remaining information is provided in Enclosure 1 to this letter, which consists of Revisions 16 and 11 to the San Onofre Units 2 and 3 IST Programs.

Revisions 16 and 11 to the IST Programs provide the following: (1) withdrawal of Pump Relief Request (PRR) No. 5, (2) revised Valve Relief Request (VRR) Nos. 2, 3, 11, 12, 13, 16, 18, 20, 23, and 24, and (3) new VRR No. 25. These

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relief requests are submitted in compliance with the requirements of 10 CFR 50.55a(g). Enclosure 2 is a summary listing of all SCE Pump and Valve Relief Requests for your use.

The following is a summary of the relief requests provided in Enclosure 1:

1. PRR No. 5: LPSI, Spray, Diesel Fuel Transfer and AFW Pumps Mini-Flow Testing.

SCE is withdrawing PRR No. 5. The SCE program has been modified to comply with GL 89-04. Testing the pumps on mini-flow will be performed quarterly, and full or substantial pump flow will be measured during the following conditions:

1. LPSI Pumps: During Cold Shutdown when the shutdown cooling system is in operation.
 2. Containment Spray Pumps: During refueling, when filling the refueling cavity.
 3. Diesel Fuel Transfer Pumps: During quarterly testing because the flow instruments have recently been installed.
 4. Auxiliary Feedwater Pumps: During Cold Shutdown using the emergency flow path (Mode 3 for the steam driven auxiliary feed pump).
2. VRR No. 2: Alternate Testing for Safety Injection System Check Valves: 24-001-C-724 - RW Tank T005 to Spray Pump P012 Suction Header, and 24-002-C-724 - RW Tank T005 to Spray Pump P013 Suction Header.

Relief was granted from full stroke quarterly exercising these valves (See Reference 1, NRC SER, paragraph 4.2.2.3 of the Technical Evaluation Report (TER)) allowing part-stroking the valves quarterly, provided the valves are full-stroked with flow during refueling outages. Relief was denied for partial disassembly and inspection.

NRC Generic Letter 89-04, Attachment 1, Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow. In this case, there is no physical way to stroke these valves either fully open or closed with the existing system design using flow. VRR No.2 provides justification for partial disassembly and inspection. SCE intends to perform the alternate testing as described in VRR No. 2 during the Unit 2 refueling outage currently scheduled to begin in August of 1991.

3. VRR No. 3: Alternate Testing for Safety Injection System Check Valves: 24-003-C-724 - Outlet Check Valve - Containment Emergency Sump, and 24-004-C-724 - Outlet Check Valve - Containment Emergency Sump.

Interim relief from exercising these valves quarterly was granted for 1 year or until the next refueling outage, whichever was greater. (See Reference 1, NRC SER, paragraph 4.2.2.4 of the TER).

Partial flow testing will be conducted following partial disassembly, prior to returning the valves to service. Additionally, we will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves swing fully open during partial flow testing. When another method is developed to verify the full-stroke capability of these check valves, this relief request will be revised or withdrawn.

4. VRR No. 11: Alternate Testing for Safety Injection System Check Valves: 12-040-A-551 - Safety Injection Tank T008 Outlet Check Valve, 12-041-A-551 - Safety Injection Tank T007 Outlet Check Valve, 12-042-A-551 - Safety Injection Tank T009 Outlet Check Valve, and 12-043-A-551 - Safety Injection Tank T010 Outlet Check Valve.

Relief was granted from full stroke quarterly exercising these valves (See reference 1, NRC SER, paragraph 4.2.1.1 of the TER) provided a partial flow test is conducted following partial disassembly.

Partial flow testing will be conducted following partial disassembly, prior to returning the valves to service. Additionally, we will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves swing fully open during partial flow testing. When another method is developed to verify the full-stroke capability of these check valves, this relief request will be revised or withdrawn.

5. VRR No. 12: Alternate Testing for Safety Injection System Check Valves: 16-077-C-645 - LPSI Pump 2P016 Suction Header Check Valve, 16-084-C-645 - LPSI Pump 2P015 Suction Check Valve, 16-199-C-645 - LPSI Pump 2P015 Suction Header Check Valve, and 16-201-C-645 - LPSI Pump 2P015 Suction Header Check Valve.

Relief was granted from full stroke quarterly exercising these valves (See Reference 1, NRC SER, paragraph 4.2.2.2 of the TER) allowing a part-stroke of the valves quarterly, provided the valves are full-stroked with flow during refueling outages. Relief was denied for partial disassembly and inspection.

This revised relief request adds a stroke test using flow from the Refueling Water Storage Tanks to the refueling canal. During the fill of the refueling canal, the LPSI pump can be run for a short time to full-stroke the valves in pairs.

6. VRR No. 13: Alternate Testing for Containment Spray System Check Valves: 8-004-C-406 - Containment Isolation Stop Check Valve - Spray Header #1 and 8-006-C-406 - Containment Isolation Stop Check Valve - Spray Header #2.

Interim relief from exercising these valves quarterly was granted, (See Reference 1, NRC SER, paragraph 4.3.1.1 of the TER).

Partial flow testing will be conducted following partial disassembly, prior to returning the valves to service. Additionally, we will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves swing fully open during partial flow testing. When another method is developed to verify the full-stroke capability of these check valves, this relief request will be revised or withdrawn.

7. VRR No. 16: Rapid Acting Valves.

Relief was granted from stroke time trending and corrective action requirements for these valves (See Reference 1, NRC SER, paragraph 4.1.2.1 of the TER) provided we comply with GL 89-04.

This revised VRR changes the limit of the rapid acting valve stroke time range from 5 seconds to a new limit of 2 seconds in compliance with GL 89-04.

8. VRR No. 18: Alternate Testing for Main Steam System Check Valves: 4-003-D-620 - Steam Supply - S/G E088 to AFP Turbine K007 Check Valve, and 4-005-D-620 - Steam Supply - S/G E089 to AFP Turbine K007 Check Valve.

Relief was granted from full stroke quarterly exercising these valves (See Reference 1, NRC SER, paragraph 4.5.1.1 of the TER), provided the valve is part-stroke exercised to the open position with flow after reassembly.

The enclosed revision to VRR No. 18 contains a commitment to conduct a partial stroke test following the partial disassembly of the valves. We will actively pursue the use of non-intrusive diagnostic techniques such as acoustics or radiography to demonstrate that these valves close when subjected to reverse flow conditions. If another method is developed to verify the reverse flow closure

capability of these check valves, this relief request will be revised or withdrawn.

9. VRR No. 20: Alternate Testing for Condensate and Feedwater System Check Valves: 20-036-C-609 - Main Feed Check at Steam Generator E089, and 20-129-C-609 - Main Feed Check at Steam Generator E088.

Relief was granted from full stroke quarterly exercising these valves (See Reference 1, NRC SER, paragraph 4.6.1.1 of the TER) provided we part-stroke exercise the valve to the open position with flow after reassembly.

The enclosed revision to VRR No. 20 contains a commitment to conduct a partial stroke test following the partial disassembly of the valves. We will actively pursue the use of non-intrusive diagnostic techniques such as acoustics or radiography to demonstrate that these valves close when subjected to reverse flow conditions. If another method is developed to verify the reverse flow closure capability of these check valves, this relief request will be revised or withdrawn.

10. VRR No. 23: Use of average/reference stroke time in determining entry into increased frequency testing (ALERT).

Relief was granted to use reference stroke times in evaluating performance for power operated valves (See Reference 1, NRC SER, paragraph 4.1.3.1 of the TER) provided the reference stroke times are established when these valves are known to be operating properly.

This revised VRR adds the requirement that the reference stroke times are established when the valve is known to be operating properly. This revision also deletes mention of abnormality or erratic action requirements of the Code (irrelevant to the relief requested and included elsewhere in the IST Program).

11. VRR No. 24: Determining the portion of Cold Shutdown interval valves to be tested in an outage.

The revised VRR contains only editorial changes. The first sentence under Test Requirement now begins with "Code section IWV-3412(a) requires that." The following sentence is added to Basis for Relief: "Requiring completion of all required valve testing prior to plant restart would be a hardship because it could result in costly extensions of cold shutdowns." The Alternate testing section is revised by adding the phrase "starting from the last test performed

at the previous cold shutdown," changing 90 days to 92 days, and adding the phrase "where ample time is available."

12. VRR No. 25: Atmospheric Dump Valve Stroke (ADV) Testing Frequency.

In response to the NRC SER, Appendix C, Item 17, this new VRR justifies a full stroke of the valve on a cold shutdown interval and specifies a partial stroke test of the ADVs without isolation on a quarterly basis. The next quarterly test is scheduled to be performed in September of 1991. SCE prefers to perform this test consistent with VRR No. 25, because VRR No. 25 tests the valve analogous to actual design conditions and does not isolate an ADV making it unavailable to perform its safety function.

In summary, revised PRR No. 24 is provided for your review and approval due to editorial changes. PRR No. 5 is withdrawn, and VRR Nos. 3, 11, 12, 13, 16, 18, 20, and 23 have been revised in compliance with the NRC SER, and are provided for your review and approval.

Because it is physically impossible for SCE to full-stroke the Safety Injection System Check Valves 24-001-C-724 and 24-002-724 using flow, SCE will be performing tests at Unit 2 in accordance with VRR No. 2 in September of 1991. Testing of the ADV's will be performed in accordance with the NRC SER until VRR No. 25 is approved. Our next scheduled test of the ADVs is in September of 1991.

SCE will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that the check valves affected by VRR Nos. 2, 3, 11, and 13 swing fully open during partial flow testing, and the check valves affected by VRR Nos. 18 and 20 close when subjected to reverse flow. SCE will revise or withdraw these relief requests when appropriate testing is available. With this submittal, SCE has responded to all Items in the NRC SER.

If you have any questions or would like additional information, please let me know.

Very truly yours,

R. M. Rosenblum

Enclosures

cc: J. B. Martin, Regional Administrator, NRC Region V
C. Caldwell, NRC Senior Resident Inspector, San Onofre Units 1, 2 and 3