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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**
Generic Letter 89-10, Motor Operated Valves
San Onofre Nuclear Generating Station
Units 2 and 3

References: 1. August 29, 1990 F. R. Nandy (Edison) letter to the NRC (Document Control Desk), Subject: Implementation Programs for Generic Letter 89-10: Motor Operated Valves ..., San Onofre Nuclear Generating Station, Units 2 and 3

2. August 28, 1992 Walter C. Marsh (Edison) letter to the NRC (Document Control Desk), Subject: Schedule for Generic Letter 89-10 "Motor Operated Valve Testing and Surveillance"

3. October 29, 1992 NRC letter to Harold B. Ray (Edison), Subject: Extension of Schedule for Completion of Testing Program in Response to Generic Letter 89-10 at San Onofre Units 2 and 3

In response to Generic Letter (GL) 89-10, by Reference 1 Southern California Edison (Edison) committed to perform in situ, design basis testing on all safety related Motor Operated Valves (MOVs) which are practical to test, except for non-position changeable safety related MOVs. We have proceeded on this basis to date. However, based on our current level of experience and on the NRC guidance provided in Supplements 1 and 6 of GL 89-10, this letter is to inform the NRC that 18 of the total 178 MOVs in the GL 89-10 program in both San Onofre Units 2 and 3 will no longer be in situ, design basis tested, as had previously been planned. When needed, credit is taken for grouping, which includes performing design basis testing on identical MOVs in the group, as part of the justification for not performing in situ, design basis testing.

Summarized below are the justifications for relaxing the commitment for in situ design basis testing of 18 MOVs which have been placed in 4 similarity groups. Even though the commitment for design basis testing is being relaxed, each MOV will be tested under static conditions. In addition, with the

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exception of group 2 below, an identical MOV has been tested at maximum practical differential pressure (DP) and flow conditions in the other unit.

When grouping is used as a basis for eliminating dynamic design basis testing, the 7 grouping considerations of GL 89-10, Supplement 6 have been met.

The specific MOVs which will no longer be in situ, design basis tested and the bases for this reduction in testing scope are as follows:

1. 2HV6211, 2HV6216, 2HV6223, 2HV6236

   These Unit 2 MOVs are Component Cooling Water Non-Critical Loop containment isolation valves. They are all Fisher Model 9220, 10" butterfly MOVs in a pumped, fluid flow application. Results from design basis testing in Unit 3 indicate that valve shaft load requirements are well within design assumptions.

   Acceptance of operability will be based on MOV design and application considerations and static testing of these MOVs. In addition, final acceptance of these MOVs will include consideration of MOV capability based on EPRI Performance Prediction Program modeling.

2. 2HV9949, 2HV9950, 3HV9949, 3HV9950

   These Unit 2 and 3 MOVs provide isolation for the Containment Purge system and are required to close on a Containment Purge Isolation Signal (CPIS) in Mode 6. All of these MOVs are 42" Fisher Model 9220 butterfly valves. The design basis conditions for these MOVs are less than 1 psi at a flow of 38,000 cfm of air. These design basis conditions are considered essentially equivalent to static test conditions because of the very low DP and the fluid medium being air.

   The design basis conditions are considered to be essentially equivalent to static test conditions because the affects of dynamic fluid flow forces on the valve during closure are very small due to the low air mass flow rate. In addition, the effect of design basis differential pressure on operation of the purge valves is small because at the point of maximum throttling torque, during a closing dynamic stroke, torque due to differential pressure accounts for only 15% of the total required calculated dynamic torque. The majority of the total dynamic torque would be comprised of packing torque, gear box inefficiencies, and other losses.

   In addition, the minimum seating torque exceeds the maximum total dynamic torque in the closing direction by over 400%. Therefore, effects due to only differential pressure are not only a very small portion of the dynamic torque, but are less than 3% of the minimum seating torque.

   Grouping as allowed by GL 89-10, Supplement 6 is not the basis for relaxing the requirement for design basis testing of these valves.

Design basis testing is not considered useful because the effects of design basis differential pressure and flow are insignificant with respect to non differential pressure related valve requirements such as packing torque or seating requirements.

Acceptance of operability will be based on MOV design and application considerations and static testing of these MOVs. In addition, final acceptance of these MOVs will include consideration of MOV capability based on EPRI Performance Prediction Program modeling.

3. 2HV9367, 2HV9368, 3HV9235, 3HV9240, 3LV0227B, 3LV0227C

These MOVs are all Target Rock, parallel-disc gate valves in a pumped, fluid flow application. MOVs 2HV9367/8 are the Containment Spray Header containment isolation valves, 3HV9235/40 are the Boric Acid Makeup valves, and 3LV0227B/C are the Charging System suction valves.

Design basis testing of 8 of the 14 MOVs in this group indicates that a valve factor of 0.45 will bound all test experience for this group. Each of these MOVs is controlled by limit switches in both the open and closed directions. Because these MOVs open and close on limit, operating margin is based on a calculation of minimum actuator capability.

An assessment of all MOVs in the group indicates that the Containment Spray valves have at least 40% margin. The Boric Acid makeup valves and the Charging System Suction valves have at least 150% margin.

Based on the successful design basis test experience in this group and verification of significant design margin, there is no benefit to be expected from design basis testing these remaining 6 MOVs.

Acceptance of operability will be based on MOV design and application considerations, satisfactory design basis test results for identical valves in the other unit, margins, and static test results for these MOVs.

4. 3HV9337, 3HV9339, 3HV9377, 3HV9378

These Unit 3 MOVs are normally-closed, WKM, split-disc gate valves. They separate the reactor coolant system from the suction of the Shutdown Cooling system pumps. Either the first two or the last two in this group must be opened to initiate shutdown cooling. They do not open against flow, and the only DP requirement is in the opening direction on initial cracking open of the valve disc. Because the open torque switch is fully bypassed, full actuator capability is available to overcome DP.

Open stroke testing of the identical valve with the same application in Unit 2 indicates there is at least 75% margin to overcome the necessary valve disc pullout force. Furthermore, the valves are stroked open near

to design conditions every time they are opened to establish plant cold shutdown.

Acceptance of operability will be based on MOV design and application considerations, satisfactory design basis test results for identical valves in the other unit, margins, and static test results for these MOVs.

A listing of these 18 MOVs including similarity information is provided in Enclosure 1.

With the 8 Unit 2 MOVs and the 10 Unit 3 MOVs no longer being design basis tested, as discussed above, Edison will still be design basis testing 77 MOVs at Unit 2 and 75 MOVs at Unit 3, which is 87% and 84% of the total GL 89-10 MOV population at Units 2 and 3, respectively. A summary of the number of MOVs being design basis tested is provided in Enclosure 2.

With the exception of the reduced number of MOVs to be design basis tested in the Cycle 8 refueling outages, all the commitments made in the August 28, 1992 Edison letter to the NRC (Reference 2), in which a schedule extension was requested for the San Onofre Units 2 and 3 GL 89-10 program, and the NRC requirements in the October 29, 1992 NRC letter (Reference 3), which granted the schedule extension, have been or will be met.

The direct costs associated with in-situ design basis testing have been conservatively estimated to be approximately $15,000 for each MOV. Therefore, reducing the design basis testing scope by 18 MOVs will save approximately $270,000 in direct costs.

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

Sincerely,

Enclosures

cc: L. J. Callan, Regional Administrator, NRC Region IV
A. B. Beach, Director, Division of Reactor Projects, Region IV
K. E. Perkins, Jr., Director, Walnut Creek Field Office, NRC Region IV
J. A. Sloan, NRC Senior Resident Inspector, San Onofre Units 2 & 3
M. B. Fields, NRC Project Manager, San Onofre Units 2 and 3

ENCLOSURE 1

SIMILARITY CHARACTERISTICS FOR
18 MOVs TO NO LONGER BE DESIGN BASIS TESTED

SAN ONOFRE UNITS 2 AND 3

MOV No.	Mfg.	Type	Size
2HV6211	Fisher	butterfly	10"
2HV6216	Fisher	butterfly	10"
2HV6223	Fisher	butterfly	10"
2HV6236	Fisher	butterfly	10"
2HV9949	Fisher	butterfly	42"
2HV9950	Fisher	butterfly	42"
3HV9949	Fisher	butterfly	42"
3HV9950	Fisher	butterfly	42"
2HV9367	Target Rock	parallel disc gate	8"
2HV9368	Target Rock	parallel disc gate	8"
3HV9235	Target Rock	parallel disc gate	3"
3HV9240	Target Rock	parallel disc gate	3"
3LV0227B	Target Rock	parallel disc gate	3"
3LV0227C	Target Rock	parallel disc gate	3"
3HV9337	WKM	split-disc gate	16"
3HV9339	WKM	split-disc gate	16"
3HV9377	WKM	split-disc gate	8"
3HV9378	WKM	split-disc gate	8"

ENCLOSURE 2

GENERIC LETTER 89-10 MOVs
DESIGN BASIS TESTING SUMMARY

SAN ONOFRE UNITS 2 AND 3

UNIT 2	UNIT 3	
89	89	TOTAL GL 89-10 MOV POPULATION
4	4	DESIGN BASIS TESTS NOT PRACTICAL
8	10	DESIGN BASIS TESTS WILL NOT BE PERFORMED
77	75	DESIGN BASIS TESTS
91%	88%	DESIGN BASIS TESTING OF GL 89-10 MOVs WHICH ARE PRACTICAL TO TEST
87%	84%	DESIGN BASIS TESTING OF GL 89-10 MOVs BASED ON TOTAL GL 89-10 POPULATION