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

Gentlemen:

Subject: **Docket No. 50-206
Use of Conservative Best Estimate Source Term
for Small Break LOCAs
San Onofre Nuclear Generating Station, Unit 1**

This letter informs you that we will be calculating operator doses using 1% of the Regulatory Guide 1.4 source term for certain actions outside the control room following a small break LOCA (SBLOCA). These actions were identified as a result of our recently completed single failure analysis and modifications made in response to NRC Bulletin 88-04. The results of recently completed small break LOCA analyses support the use of reduced source terms since core damage is not expected for those events which require these actions. Cycle 12 modifications to the Safety Injection System required by the NRC's January 2, 1990 Order, will eliminate the need to assume less than the full TMI source term for any post-accident actions outside the control room. This matter has been discussed with our NRC Project Manager, Mr. George Kalman.

BACKGROUND

The NRC directed licensees to implement the actions described in NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations," in a letter dated September 13, 1979. Section 2.1.6.b of NUREG-0578 required licensees to conduct a radiation and shielding design review to determine if personnel occupancy would be unduly limited in areas which require access post-accident.

An NRC letter dated October 30, 1979 stated that the radioactive source term used in this review must be equivalent to that specified by Regulatory Guide 1.4. That regulatory guide requires the assumption that certain percentages of the radioactive material contained in the core are instantaneously released into the reactor coolant system during an accident. The letter further stated that the acceptable dose criteria should be based on the limits specified in 10CFR50, Appendix A, Criterion 19.

IDENTIFICATION OF POST-ACCIDENT OPERATOR ACTION

In order to resolve issues resulting from the recently completed single failure analysis and concerns identified in NRC Bulletin 88-04, we have

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determined that certain operator actions are required outside the control room following a SBLOCA. However, operator doses determined using the source term specified by Regulatory Guide 1.4 would exceed the limits specified in 10CFR50, Appendix A, Criterion 19 for four of these actions. The four actions and the reasons they are required are summarized in Attachment 1.

CONSERVATIVE BEST ESTIMATE SOURCE TERM

We have recently performed a reanalysis of the ECCS response to a range of SBLOCAs. This reanalysis determined that there is no core uncover and no cladding failure for most of the SBLOCA break sizes analyzed. The worst analyzed break (six inches diameter), resulted in only limited core uncover, peak cladding temperature remains below 1500°F, and no cladding failure occurs. As a result, use of a source term equal to the maximum RCS activity allowed by Technical Specifications, rather than the Regulatory Guide 1.4 source term, can be technically justified for these events. For our assessments a more conservative source term, equal to 1% of the Regulatory Guide 1.4 source term was assumed. This assumption increases the estimated dose by approximately 10 times that resulting from the maximum Technical Specification activity alone. The resulting doses for each action are summarized in Attachment 1. As shown in this attachment, the estimated dose for each action is less than the five Rem limit specified in 10CFR50, Appendix A, Criterion 19.

LONG TERM RESOLUTION

All four of the operator actions described in the attachment are related to operation of the Safety Injection System. Modifications to this system are required by the NRC's January 2, 1990 Order. These modifications will eliminate the need to assume less than the full Regulatory Guide 1.4 source term for any post accident action outside the control room. Therefore, the need to assume reduced source terms is necessary for only one cycle of plant operations.

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

Very truly yours,



Attachment

cc: George Kalman, NRC Project Manager, San Onofre Unit 1
J. B. Martin, Regional Administrator, NRC Region V
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre Units 1, 2 & 3
C. D. Townsend, NRC Resident Inspector, San Onofre Unit 1

ATTACHMENT 1

ACTION NO.	ACTION DESCRIPTION	REASON ACTION IS REQUIRED	ESTIMATED MAXIMUM DOSE USING 1% of REG. GUIDE 1.4 Source Term
1.	Close Valves FWS-472, and FWS-473	FWS-472 and FWS-473 are the manual isolation valves for remotely operated MFWP to condenser recirculation valves CV-36 and CV-37. Closure of the manual valves is required to mitigate the remote valves failing open. Such a failure would divert RWST water to the condenser and cause an ongoing loss of inventory.	4.1 Rem
2.	Close Valve CRS-360	CRS-360 is the manual isolation valve for the RWST filter. Closure of this valve is required to mitigate the potential failure of the non-seismic RWST filter. Leakage from such a failure would cause an ongoing loss of RWST water.	0.4 Rem
3.	Open Valves FWS-599 and FWS-600	FWS-599 and FWS-600 are manual valves in the MFWP miniflow bypass lines. Opening of these valves is required to assure that the pump miniflow is adequate to prevent damage to the MFWPs during long term operation at or near shutoff head.	2 Rem
4.	Shift Manual Transfer switch No.8 to the alternate power supply	Manual Transfer Switch No. 8 controls the power supplies to MOV-850C and MOV-358 which are the loop C injection and recirculation valves respectively. Failure of the normal power supply causes the valves to be energized by the battery powered uninterruptable power supply inverter. Shifting to the alternate power supply is required prior to depletion of the battery.	3 Rem*

*This value is a conservative estimate. The associated calculation has not been finalized.