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February 2, 1990

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Mr. Charles M. Trammell, Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 13-E16
11555 Rockville Pike
Rockville, Maryland 20852

Dear Mr. Trammell:

Subject: **Docket No. 50-206**
Temporary Change In Method For Limitation Of AFW Flow
San Onofre Nuclear Generating Station, Unit 1

During a meeting with you and others at the San Onofre site on September 26, 1989, among other things we discussed the understanding and implementation by Southern California Edison (SCE) of the requirements of 10CFR50.59. At that time, I indicated to you that we would use NSAC/125, "Guidelines for 10CFR50.59 Safety Evaluations, June 1989" as the basis for our future compliance with 10CFR50.59 requirements and that we would advise you of any problems we experienced in this regard.

Recently, we have had several discussions with you, with the Resident Inspector's office at San Onofre and with others concerning our response to having identified that, under certain circumstances, the San Onofre Unit 1 Auxiliary Feedwater (AFW) flowrate might exceed 150 gpm to one or more steam generators, contrary to the design and licensing bases. This situation is discussed in detail in Licensee Event Report (LER) 89-031 dated January 29, 1990.

The purpose of this letter is to summarize our application of NSAC/125 guidance to the temporary change we implemented upon identification of this condition and to inform you of our plans for submittal of the permanent change to the NRC for approval.

LER 89-031 describes the identification of the reported condition. It was first described in an internal Nonconformance Report (NCR) initiated on December 27 and dispositioned on December 29, 1989. Revision 0 of NCR S01-P-7441 initially documented all information which could be obtained concerning the condition, even though much of that information could not

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immediately be verified. Recognizing this lack of immediate verification, the NCR included in the section which addresses 10CFR50.59 the requirement that:

"As an additional compensatory measure, a dedicated individual will be placed at the auxiliary feedwater panel to notify the operator of the need to take manual control to limit flow to 150 gpm under the conditions listed."

As discussed in LER 89-031, operator action to limit AFW flow to 150 gpm has long been included in operating procedures, and passive design features to limit flow have only been in use since May 1989. Accordingly, reliance was placed on operator action under the limited circumstances described in the LER when flow might otherwise exceed 150 gpm, with the addition of a dedicated individual to devote full attention to this parameter. Although the NCR also included rationale to the effect that a damaging water hammer would not occur even without operator action, SCE management relied upon the compensatory measure described above, pending further evaluation.

SCE's 10CFR50.59 evaluation of the NCR disposition applies NSAC/125 guidance as follows:

Temporary Change

The use of operator action to limit flow to 150 gpm under certain circumstances is a temporary change. In accordance with the discussion on pg. 4-3 of NSAC/125:

"Temporary changes to the facility should be evaluated to determine if an unreviewed safety question exists. Examples of temporary modifications include... equipment used on a temporary basis."

In this instance, the operator will use equipment (i.e., indication and controls in the Control Room) to assure that flow is limited to 150 gpm to each steam generator.

With respect to the problem as initially identified, the following statement from pg. 2-4 of NSAC/125 is relevant:

"Changes include previously undiscovered conditions that deviate from those described in the SAR if the licensee proposes to operate permanently in this configuration."

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The "previously undiscovered" condition in this instance is the fact that, under certain circumstances, AFW flow could exceed 150 gpm. As we do not plan to operate permanently in that configuration, but immediately took action to assure that flow would be limited to 150 gpm, no "change" to permit flow to exceed 150 gpm is being considered with respect to 10CFR50.59 requirements. (The existence of the previously undiscovered condition, of course, has been reported in an LER.)

If a passive design feature can be considered to be equivalent to an "automatic" feature in this case, then the following question from pg. 4-4 of NSAC/125 is answered "yes":

"Does the change convert a feature that was automatic to manual or vice versa?"

In summary, with respect to 10CFR50.59 and NSAC/125, we have thus far addressed the temporary change to use manual, operator action, in part, to achieve a flow limitation that is described in the design and licensing bases as achieved entirely by a passive design feature.

Probability of Occurrence

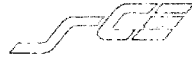
It is noted on pg. 3-3 of NSAC/125 that:

"Compensating effects such as changes in administrative controls may be used to offset an increase or trend in the probability of accidents of moderate frequency."

The automatic initiation of AFW falls within the range of events of moderate frequency, and the use of manual, operator action to limit flow to 150 gpm may be described as an administrative control. Therefore, the compensation provided by this administrative control is included in responding to the series of questions listed in Section 3.1 of NSAC/125 when performing the 10CFR50.59 evaluation of the temporary change.

Naturally, the use of operator action is not the same as the action of a passive device when limiting flow. The effects of human factors and the need to use instrumentation and controls to limit flow in certain circumstances must be considered. In this regard, pg. 3-4 of NSAC/125 states that:

"Where a change in probability is so small or the uncertainties in determining whether a change in probability has occurred are such that it cannot be reasonably concluded that the probability has actually changed (i.e., there is no clear trend towards increasing probability), the change need not be considered an increase in probability."



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In the absence of having dedicated an individual to monitor AFW flowrate, SCE would conclude that the probability of exceeding 150 gpm would increase when comparing a passive device to reliance on operator action. However, the use of a dedicated individual greatly reduces the likelihood that excess flow will go unnoticed by the normal operating staff.

Also, reliance on manual control using instruments in the Control Room tends to increase the probability of exceeding 150 gpm, due to the lower reliability of these instruments as compared to a passive device. However, limiting this reliance to only a short period tends to offset this increase. In this regard, on pg. 3-4 of NSAC/125, it is stated that:

"Licensees should utilize reasonable engineering practices, engineering judgement, and PRA techniques, as appropriate, in determining whether the probability of occurrence of an event increases as a result of implementing a proposed change."

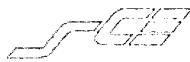
Our initial judgement in completing Revision 0 of NCR SO1-P-7441 was that, taking into consideration (1) the use of a dedicated individual to monitor the AFW parameter and (2) the temporary nature of the change, the probability of occurrence of a damaging water hammer was not considered to have increased. Thus, the AFW system was considered to remain Operable with this temporary change in place.

Over the past 30 days, we have continued our evaluation and are now at the point of issuing a revision to update the NCR. During that time, we have obtained analyses from Westinghouse and CREARE of the potential for a damaging water hammer at Unit 1 due to excessive AFW flowrates, recognizing that a water hammer did occur in the past due to check valve leakage, and that substantial modifications have been made to the unit since that event. Also, as indicated above, we have had several discussions with NRC staff.

Our conclusions regarding the temporary change, with respect to the requirements of 10CFR50.59, remain the same. That is, that the temporary change does not involve an unreviewed safety question. A copy of the revised and updated NCR is being provided to the Resident Inspector's office at San Onofre for information.

In addition, we have worked diligently to develop a permanent change which will satisfy the design and licensing bases with respect limiting AFW flowrate. As this will be a

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permanent change and will use a different method than currently described in the bases, it will be submitted to the NRC for approval as an unreviewed safety question. We expect this submittal to be made by about February 15, 1990 and to implement the change shortly following its approval.

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

Sincerely,

cc: John B. Martin, Regional Administrator, Region V
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre