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June 18, 1992

Mr. John B. Martin
Regional Administrator
U. S. Nuclear Regulatory Commission, Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Subject: Docket No. 50-206
Request for Temporary Waiver of Compliance
Valve Actuator Maintenance - Safety Injection System
San Onofre Nuclear Generating Station, Unit 1

Reference: Letter, H. E. Morgan (SCE) to USNRC Document Control Desk, Amendment Application 188, Supplement 3, dated June 5, 1992

The purpose of this letter is to document the basis for granting a Temporary Waiver of Compliance from the requirements of Technical Specification (TS) 3.0.3 without fully complying with the requirements of TS 3.3.1, "Safety Injection System and Containment Spray Systems - Operating Status," Sections A(1) and A(3) for a period of 24 hours. Approval of this request was necessary to avoid an unneeded shutdown of Unit 1 while replenishing hydraulic fluid in the actuator for valve HV-851A which is associated with the Safety Injection (SI) system, as discussed below. Verbal approval of this request was granted on June 17, 1992, for a period not to exceed 24 hours commencing at 1600 on June 17th by Mr. Ken Perkins (USNRC-RV) in a telephone discussion with Mr. R. W. Krieger (SCE).

On June 18, 1992, at 1148, HV-851A was restored to service following replenishment of the actuator hydraulic fluid placing Unit 1 in full compliance with TS 3.3.1.

A. Requirements For Which The Waiver Is Requested:

TS 3.3.1, defines the operability requirements for the SI System (SIS). The objective of this TS is to ensure availability of the SIS while the reactor is critical. TS 3.3.1.A(1) and A(3) require, in part, that two trains of SI and associated valves be operable whenever the reactor is critical, but does not provide an ACTION statement in the event one train or component becomes inoperable.

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TS 3.0.3 requires, in part, that when a limiting condition for operation is not met, except pursuant to the associated ACTION requirements, a unit shutdown shall be initiated within one hour.

Unit 1 is provided with two independent trains of SI which, upon actuation, inject borated water from the Refueling Water Storage Tank (RWST) to the Reactor Coolant System (RCS) using the Main Feedwater Pumps (MFWP).

In order to utilize the MFWPs for SI, each MFWP and its feedwater train are equipped with two pneumatically-hydraulically operated suction and discharge isolation valves which close on SI to isolate the MFWP from its condensate supply and feedwater piping. Each corresponding SI train is similarly provided with two pneumatically-hydraulically operated pump suction and discharge isolation valves which open on SI to connect the MFWP suction to the flow path from the RWST, and to connect the MFWP discharge to the SIS. The MFWP isolation valves for the SI system are double disc gate valves, each with a pneumatic-hydraulic actuator which includes a hydraulically operated piston valve actuator and one accumulator. The accumulator contains a piston which separates the compressed nitrogen from trapped hydraulic fluid. The nitrogen is stored in the accumulator at pressures between approximately 3000 and 3550 psig to provide the motive force necessary to move the valve actuator to its SI position when the trapped hydraulic fluid over the actuator piston is released to a reservoir. In the event that the accumulator nitrogen pressure drops below approximately 3100 psig, the accumulator is recharged to approximately 3500 psig.

The MFWP SI discharge isolation valves (HV-851A and HV-851B) are maintained closed during normal operation to block the flow of feedwater to the RCS. In the event of a SI actuation signal, the valves associated with the feedwater system close, thus isolating flow to the steam generators, and the valves associated with the SIS open, thus providing the required SI flow into the RCS. In the event of a failure of one SI discharge valve to open, the SI flow to the RCS needed to provide requisite core cooling is provided by the other SIS train.

B. Circumstances Surrounding the Situation:

The actuator associated with SI discharge isolation valve HV-851A has been experiencing very minor hydraulic fluid leakage which has been monitored by the SCE station engineering staff. As the result of recent evidence that the leakage rate may be increasing, a thorough evaluation of the impact of the HV-851A leakage on valve operability was prompted. The actuator accumulator is configured such that a significant loss of hydraulic fluid could limit the capability of the valve to stroke to the fully open position upon demand. The evaluation, which included the use of ultrasonic testing to determine the position of the accumulator piston, concluded that a loss of hydraulic fluid has occurred which would prevent the valve from opening beyond approximately 85% of full stroke. In this condition the valve would still perform its required safety function, since analyses have recently been completed which demonstrates that the required safety injection flow would occur with HV-851A 50% open. However, it was necessary to remove HV-851A from service to recharge the accumulator in order to regain the full stroke capability of the valve. The SCE Retest Committee has reviewed the proposed accumulator recharging, including the effects of the unbalanced forces on the actuator and valve during the recharging evolution. The Retest Committee concluded

that, other than restoring the full stroke range of the valve, the capability of the valve to satisfy its safety function would be unchanged by recharging the accumulator. Therefore HV-851A was not stroke tested prior to returning the valve to service.

As a consequence of the continuing oil leak, measures will be implemented to assure continued operability of HV-851A. These measures, which include tracking and trending the frequency of accumulator nitrogen recharges, will be used as an indicator of oil loss.

Valve HV-851A was inoperable while the maintenance necessary to replenish oil and nitrogen was being performed, since it would not open if required, in response to a safety injection signal. Since no ACTION requirements are provided in TS 3.3.1 for this situation, TS 3.0.3 would be applicable.

This temporary waiver of compliance was requested since it is considered to be safer to maintain the unit in the present configuration during the periods required to restore HV-851A to its full stroke range than to expose the unit to a shutdown transient which would otherwise be required. The need for this request for a temporary waiver of compliance could not have been avoided since the current TS 3.3.1 does not contain an ACTION statement which is consistent with the Standard Technical Specifications (STS) for the current SIS design; such an ACTION statement would permit replenishment of the oil without shutting down the unit.

To prevent unnecessary entries into TS 3.0.3 for situations such as this, a request to amend the Technical Specifications (Amendment Application No. 188) was previously submitted on August 31, 1990, and has been subsequently supplemented (see reference). This request is currently being reviewed by SCE and NRR. Section D, below, further describes the proposed changes.

As discussed above, verbal approval was granted by the NRC for a 24 hour period commencing at 1600 on June 17, 1992.

C. Compensatory Actions Necessary:

During the effective period of this waiver, all required systems and components of the unaffected train, including emergency power, were maintained operable. As noted above, HV-851A was maintained closed throughout the maintenance activities, and was returned to service as soon as possible following the necessary maintenance. This request was applicable to HV-851A only; as such, had any of the other components required for SI become inoperable, the requirements of TS 3.0.3 would have been implemented.

D. Preliminary Evaluation of the Safety Significance of this Request:

As noted above, all required systems and components of the unaffected train needed to satisfy the SI function were maintained operable. In no case would operation beyond 24 hours have been permitted without complying with the appropriate LCO 3.0.3 shutdown requirements.

Continued operation of SONGS Unit 1 for a period of 24 hours, while replenishing the HV-851A oil supply, was of minimal safety significance for the following reasons:

- o Unit 1 is provided with two independent and redundant trains of Emergency Core Cooling System (ECCS). Either train is capable of mitigating any event requiring the use of the ECCS. As discussed above, the alternate train was maintained fully operable.

- o Consistent with this capability, SCE had previously concluded that a TS change was appropriate to preclude unnecessary entries into TS 3.0.3. In this regard, the referenced letter submitted a proposed TS change which would modify the existing TS 3.3.1 to be consistent with guidance of the STS for ECCS. The STS typically allows ECCS components to be inoperable for a 72 hour period. During this time, the single failure criterion is relaxed. It is our understanding that NRR does not disagree with the application of the STS 72-hour ACTION statement to ECCS Components, as contained in the proposed change.

- o A probabilistic risk assessment was performed to provide a best estimate of the increase in core damage risk attributable to this repair. This assessment concluded that work associated with restoring the HV-851A oil supply at nominal full power during a 24-hour period would result in an estimated incremental increase in the annual mean core damage probability of approximately 0.9%.

E. Justification for the Duration of the Waiver:

The requested duration of this waiver is considered justified since there is minimal safety significance associated with operation in Mode 1 in this configuration. In addition, the requested duration is conservative relative to that allowed by the STS for ECCS, and is consistent with our proposed change to TS 3.3.1 presently under review by the NRC.

F. Basis for No Significant Hazards Conclusion:

10 CFR 50.92 defines that no significant hazards will occur if operation of the facility in accordance with the temporary waiver of compliance does not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

As previously discussed, the plant is provided with two redundant and independent SI trains. Short term inoperability of one of two independent SI trains does not significantly increase the probability or consequences of an accident previously evaluated; nor create the possibility of a new or different kind of accident from any previously evaluated; nor does it represent a significant reduction in a margin of safety.

G. Basis for No Irreversible Environmental Consequences:

It has been determined that this temporary waiver of compliance involves no significant increase in the amounts, and no significant change in the types of any effluent that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this temporary waiver of compliance meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the granting of the temporary waiver of compliance.

The San Onofre Nuclear Generating Station Onsite Review Committee has reviewed and approved this Request for Temporary Waiver of Compliance including acceptance of the SCE Retest Committee recommendations described in Section B above.

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

Sincerely,

cc:

R. P. Zimmerman, USNRC, Region V
George Kalman, NRC Senior Project Manager, San Onofre Unit 1
J. O. Bradfute, NRC Project Manager, San Onofre Unit 1
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre Units 1, 2 & 3