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SUBJECT: Documents basis for request for temporary waiver of compliance from requirements of Tech Spec 3.6.1.3, "Containment Air Locks," Action B to avoid unnecessary shutdown while repairs were being made to reduce leakage.

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April 9, 1992

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Subject: Docket No. 50-361
Request for Temporary Waiver of Compliance
36 Hour Delay in Action Requirement Applicability
San Onofre Nuclear Generating Station, Unit 2

The purpose of this letter is to document the basis for a request for Temporary Waiver of Compliance from the requirements of Technical Specification (TS) 3.6.1.3, "Containment Air Locks," Action "b" to avoid the unnecessary shutdown of San Onofre Unit 2 while repairs were being made to reduce leakage associated with the containment personnel air lock. Verbal approval of this request was granted at approximately 1640 PDT on April 8, 1992 by the NRC in a telephone discussion with Mr. R. W. Krieger of SCE. The conditions requiring this waiver were corrected at 1045 on April 9th thus restoring Unit 2 to full compliance with the TSs.

A. Requirements for which the waiver was requested:

TS 3.6.1.3 requires, in part, that each containment air lock be operable while the unit is in Modes 1 through 4 with an overall air lock leakage rate of less than or equal to 0.05 L_a (where L_a is defined as the 0.10 percent by weight of the containment air per 24 hours), at P_a (where P_a is the calculated maximum postulated containment accident pressure of 55.7 psig).

The containment personnel air lock consists of a large cylinder which penetrates the containment building and is closed at both ends by a bulkhead with doors. The doors provide personnel access to containment and are interlocked in Modes 1 through 4 to prevent the opening of both doors, thus ensuring containment integrity. The door operating mechanism consists of three sets of two handwheels; one set each is located inside and outside of

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containment, and the third set is located inside the air lock. Handwheels are provided to allow the manual operation of the door mechanism for normal containment entry and exit. The handwheel shafts are provided with pressure retaining seals where they penetrate the bulkheads. The design of the containment personnel air lock ensures that containment integrity is maintained with either one or both doors closed.

In the event that the air lock is inoperable (except as the result of an inoperable air lock door), TS 3.6.1.3, Action "b" requires that the air lock be restored to operable status within 24 hours or the unit must be placed in Mode 3 within the next 6 hours and in Mode 5 within the following 30 hours.

B. Circumstances Surrounding the Current Situation:

On April 7, 1992 at 1420, with Unit 2 in Mode 1 at approximately 100% power, performance of the 6-month interval TS 4.6.1.3 Surveillance b.1 (which tests the air lock at P_a) found the containment personnel air lock leakage rate to be approximately 0.1 L_a. Since this leakage rate exceeded that allowed by TS 3.6.1.3, the air lock was considered to be inoperable. Entry into Action "b" of TS 3.6.1.3, would have required that Unit 2 be placed in Mode 3 by 2020 PDT on April 8th, and in Mode 5 by 0220 PDT on April 10th.

Efforts to identify the source of the leakage consumed virtually all of the 24-hour out-of-service time permitted by TS 3.6.1.3, Action "b". At about 1400 on April 8th, leakage was identified at three locations of the interior bulkhead. Significant leakage was identified at one of two handwheel shaft seals where the shaft penetrates the inner bulkhead, and minor leakage was identified at the remaining shaft seal and at the viewing port installed in the inner door. Leakage testing using soap solution and helium did not identify any leakage associated with the outer door, its associated penetrations or handwheel shaft seals.

During the surveillance test, the interior of the air lock is pressurized to at least 55.7 psig. Since the air lock doors are designed to seal against air movement out of containment, both doors open toward the inside of containment. To prevent damage to the inner door during testing at P_a and to ensure that it remains sealed, the inner door is provided with a "strong-back" installed inside the air lock which functions to resist the opening force on the inner door as a result of pressurization. With the strong-back installed on the inside of the inner door, the airlock cannot be entered without opening the outer door. The leaking shaft seals cannot be repaired without access to the interior of the airlock.

In order to repair the leaking shaft seals, it was necessary to open the outer air lock door for removal of the strong-back so that access could be obtained to the air lock interior. Following completion of the repair of both shaft seals and closure of the inner door, access to the air lock interior was again made through the outer door for reinstallation of the strong-back. Leakage associated with the viewing port was determined to be insignificant and not warranting repair at this time. During the repair activity, personnel access

was accomplished using the alternate emergency containment air lock. The personnel air lock was demonstrated to be operable by performing the full pressure test specified by TS surveillance 4.6.1.3.b. Test results indicated air lock leakage to be less than 20% of the allowable leakage.

Approval of this temporary waiver of compliance was requested and granted for a period of 36 hours commencing at 1420 on April 8th. The prompt approval of this request precluded an unnecessary reactor shutdown. It was considered to be safer to maintain the unit in the present configuration during the period required to effect repairs than to expose the unit to a shutdown transient. Based upon the previous air lock surveillance history, the air lock shaft seal leaks could not have been predicted, nor could the source of the leaks be identified, the needed repairs be completed and the air lock be demonstrated operable within the 24-hour TS 3.6.1.3, Action "b" time limit.

C. Compensatory Actions Necessary

During the effective period of the waiver, the following compensatory measures were implemented:

1. Leakage testing of the outer door using helium did not identify any leakage associated with the door seal or associated penetrations.

2. The outer air lock door was maintained closed except while the strong-back was being removed and reinstalled.

3. Prior to relying on the outer air lock door for containment integrity, the pressure retaining integrity of the seal for the outer door was verified to be less than or equal to 0.01 L_a by performance of TS Surveillance 4.6.1.3.a (i.e., pressure test of the door seal at approximately 10 psig). This test was performed following each use of the outer door during the repair activity.

4. While the outer door was being relied upon for containment integrity, an individual was stationed near the door to ensure that it was not opened from the outside.

D. Preliminary Safety Significance Evaluation:

TS 3.6.1.2, "Containment Leakage," paragraph "b", specifies that containment leakage be limited to a combined leakage rate of less than 0.60 L_a for all penetrations subject to Type B and C Local Leak Rate Tests (LLRT), when pressurized to P_a. (The types of containment penetrations subject to these LLRTs are defined in 10 CFR 50, Appendix J, Section II, paragraphs G and H, respectively.)

Operation with a containment air lock leak rate of approximately 0.1 L_a is of no safety significance since the air lock leakage, when combined with the actual total leakage for penetrations subject to LLRTs, remained less than 50%

of the total leakage allowed by TS 3.6.1.2.b. Further, during the periods in which the outer door was closed, the leakage through the air lock would have been much less than 0.1 L_a and well within the leakage limits of the TS 3.6.1.3.b limiting condition for operation (i.e., no more than 0.05 L_a at P_a).

Additionally, the compensatory measures described in Section C above provided reasonable assurance that the leaking shaft seals were not relied upon for containment integrity except for the short periods of time needed to remove and reinstall the strong-back.

E. Justification for the Duration of the Waiver:

It was requested that the temporary waiver of compliance be effective through 0220 PDT on April 10, 1992. This duration ensured sufficient time to repair the leaking shaft seals and to demonstrate operability of the containment personnel air lock by performing the testing required by TS Surveillance Requirement 4.6.1.3.b.

The duration of this waiver is considered justified since there is no safety significance associated with operation as described in Sections C and D, above. Additionally, the duration of the waiver provided sufficient time to complete the necessary repairs in a safe manner and allow for contingencies.

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.

The above described compensatory measures provided assurance of continued containment integrity while repairs were being completed.

It is therefore concluded that operation of the plant in the above described configuration did not involve any significant increase in the probability or consequences of an accident previously evaluated; nor did it create the possibility of a new or different kind of accident from any previously evaluated; nor did 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 would have been 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 the actions discussed in this request for temporary waiver of compliance.

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

Sincerely,

H E Morgan

cc: R. P. Zimmerman, USNRC, Region V
K. Perkins, USNRC, Region V
C. W. Caldwell, USNRC Senior Resident Inspector
M. B. Fields, USNRC Project Manager, Unit 2 and 3