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May 12, 1993

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

Gentlemen:

Subject: **Docket No. 50-206**
Amendment Application No. 211, Permanently Defueled Technical Specifications, San Onofre Nuclear Generating Station, Unit 1

Reference: Letter, R. M. Rosenblum (SCE) to NRC Document Control Desk, "Docket No. 50-206, Operation and Surveillance Requirements for Permanently Defueled Condition for San Onofre Nuclear Generating Station, Unit 1," September 21, 1992.

This amendment application submits Proposed Change No. (PCN) 262 which requests that Permanently Defueled Technical Specifications (PDTS) be established for San Onofre, Unit 1 (SONGS 1). The plant was permanently defueled on March 6, 1993, and is being maintained in accordance with the existing Technical Specifications (as described by the referenced letter) until the NRC approved PDTS are implemented. The PDTS will replace the existing Technical Specifications in their entirety. A new license condition concerning the SONGS 1 Fire Protection Program is also proposed in accordance with Generic Letters 86-10 and 88-12.

PERMANENTLY DEFUELED TECHNICAL SPECIFICATIONS

The existing SONGS 1 Technical Specifications ensure the plant is safely operated under a wide range of conditions and can satisfactorily withstand all credible accidents. The PDTS proposed by this amendment application ensure the safe, long-term storage of irradiated fuel in the spent fuel pool (SFP). The proposed PDTS reflect the reduced number of postulated accidents against which the defueled plant must be protected.

Only two of the accidents previously analyzed in Chapter 15 of the SONGS 1 Updated Final Safety Analysis Report (UFSAR) remain relevant: (1) a loss of offsite power, and (2) a fuel handling accident. As discussed in PCN 262, the safety significance of both of these accidents is reduced during the defueled condition. The PDTS also ensure the continued ability of the SONGS 1 fuel storage facility to withstand other applicable UFSAR events, natural phenomena, and fires. No new accidents are introduced by permanently defueling the plant.

The PDTS specify a new safety limit, limiting conditions for operation (LCO), and surveillance requirements to ensure the safe storage of spent fuel in the

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SFP. Administrative controls are also included in the PDTS for overall safe operation of the permanently shut down plant. The PDTS are based on a new operational mode, the Permanently Defueled Mode, which applies when no fuel is located in the reactor and fuel is stored in the SFP.

Safety Limit

PDTS D2.1 proposes a new safety limit that the water level in the SFP be maintained above plant elevation 16 feet. This safety limit protects the integrity of the fuel cladding to guard against the uncontrolled release of radioactivity during the Permanently Defueled Mode. The new safety limit ensures the fuel is cooled sufficiently to avoid fuel overheating associated with critical heat flux conditions.

Fuel overheating is precluded during the Permanently Defueled Mode by covering the spent fuel with water at all times (the top of the stored fuel assemblies is at approximately plant elevation 15 feet 1 inch). The SFP water temperature is thermodynamically limited since the fuel storage building is maintained near standard atmospheric conditions. Therefore, as long as fuel is covered with water and the configuration of the fuel is maintained by the storage racks, the cladding temperature will be significantly less than that experienced during critical heat flux conditions and the potential for fuel overheating is precluded. Additionally, the preliminary conclusions of the ongoing SFP structural analyses indicate that the thermodynamic limit on SFP water temperature ensures the stresses in the SFP liner and concrete are acceptable. The final conclusions of those evaluations will be submitted to the Commission during June, 1993.

Limiting Conditions for Operation and Surveillance Requirements

The PDTS specify LCOs and surveillance requirements which are necessary to ensure the proposed safety limit is maintained at all times. PDTS D3.1.2 specifies a more restrictive LCO for SFP water level (plant elevation 40 feet 3 inches) to provide margin to the safety limit and for radiation shielding purposes. This LCO conforms to the SFP water level requirement of existing Technical Specification 3.8.B. The operability of the auxiliary feedwater storage tank (AFWST), as the seismically qualified source of SFP makeup water, is required by PDTS D3.2.

The PDTS also include requirements for providing SFP cooling and for maintaining the integrity of the spent fuel cladding and SFP liner during long-term storage. Requirements are included for SFP cooling and temperature (PDTS D3.1.1), water chemistry (PDTS D3.1.3), and spent fuel storage building load handling (PDTS D3.3). Surveillance requirements for the Permanently Defueled Mode are included in PDTS Section D4.

Spent Fuel Pool Thermal Conditions

Conservative analytical calculations for the SFP heat load are being completed in accordance with Branch Technical Position ASB 9-2, "Residual Decay Energy for Light-Water Reactors for Long-Term Cooling." The preliminary results demonstrate the SFP heat load is significantly lower than that calculated for

the SFP maximum normal heat load case (6.5 MBtu/hr). For example, by August, 1993 (the earliest assumed approval date for the PDTS), the heat load is calculated to be less than 2.3 MBtu/hr.

With that heat load, over 65 hours would be required, if forced cooling were interrupted, for the SFP to reach the 150°F temperature requirement specified by PDTS D3.1.1. This is sufficient time to restore cooling and/or site electrical power. In the unlikely event forced cooling could not be restored, the SFP could be passively cooled by opening the fuel storage building without exceeding 10 CFR 20 requirements. The evaluation of this hypothetical circumstance is ongoing. However, the preliminary results indicate that, if forced cooling were lost without restoration after August, 1993, the temperature of the SFP water would increase above the 150°F requirement but would not exceed approximately 180°F. Additionally, the SFP evaporation rate would be sufficiently low so that the SFP water level required by PDTS D3.1.2 could be maintained for over five days by gravity feed from the AFWST. Five days is sufficient time to restore cooling or connect another water source. Therefore, the SFP cooling system is not essential for the safe, long-term storage of spent fuel in the SFP.

The SFP thermal conditions during a loss of forced cooling that are discussed above, and are included in Figures 1, 2, and 3 of PCN 262, are preliminary. Final results of the evaluation will be submitted to the Commission during June, 1993. Additionally, a SFP heatup test is planned to determine the degree of conservatism in the SFP thermal performance analysis. Preliminary test results are expected to be available during July, 1993.

ADDITIONAL ADMINISTRATIVE CONTROLS

Additional administrative controls will be implemented concurrently with the PDTS so that the plant status can be maintained and monitored during the Permanently Defueled Mode. Specifically, administrative controls will be established for the following equipment and/or functions: monitoring of SFP water losses, auxiliary electrical supply (including the emergency diesel generators), fire protection, shock suppressors, control room emergency air treatment system, and radiation monitoring instrumentation. With the exception of the fire protection capability (the justification for administratively controlling fire protection systems is discussed below), none of these systems, components, or functions are essential for the safe, long-term storage of fuel in the SFP. The proposed additional administrative controls are discussed in Sections 2.2.3, 2.4, 2.5, 2.7, 2.8, and 2.9 of PCN 262.

FIRE PROTECTION LICENSE CONDITION

As discussed in Section 2.5 of PCN 262, fire protection LCOs and surveillance requirements are not included in the proposed PDTS. Rather, fire protection requirements from the existing Technical Specifications will be incorporated into the SONGS 1 Fire Protection Program procedures in accordance with the guidance of Generic Letters 86-10 and 88-12. The next annual update of the Updated Fire Hazards Analysis will reflect the incorporation of these fire

protection requirements into the Fire Protection Program procedures. A fire protection license condition is also proposed, in accordance with the guidance of the generic letters.

SCHEDULE REQUEST

The proposed PDTS provide adequate safety margins to protect the health and safety of the public during the Permanently Defueled Mode. The PDTS are the result of a thorough technical review and evaluation of the SONGS 1 fuel storage facility for long-term storage of spent fuel in the SFP. This amendment application, in conjunction with the future confirmation of the SFP thermal performance and structural analyses and the availability of SFP heatup test results, is intended to demonstrate the adequacy of the proposed PDTS. We request expeditious NRC approval of this amendment application so that unnecessary plant maintenance and surveillance activities are avoided.

We also request that the NRC's approval of the PDTS include a provision for a PDTS effectivity date to be determined by SCE. This scheduling flexibility is being requested due to the extent of the proposed PDTS and of the additional administrative controls which are to be implemented concurrently with the PDTS. The actual implementation date for the PDTS and administrative controls will be documented in a letter to the Commission once all the required controls are in place. The plant will be maintained until that date in accordance with the existing Technical Specifications (as described by the referenced letter).

Please let me know if you have any questions on this matter.

Sincerely,

Harold B. Ray

Enclosure

cc: J. B. Martin, Regional Administrator, NRC Region V
S. W. Brown, NRC Project Manager, San Onofre Unit 1
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