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Pacific Gas and Electric Company, Docket Nos. 50–275 and 50–323, Diablo Canyon Nuclear Power Plant, Unit Nos. 1 and 2, San Luis Obispo County, California

Date of amendment requests: February 6, 1995 (Reference LAR 95– 01).

Description of amendment requests: The proposed amendments would revise the combined Technical Specifications (TS) for the Diablo Canyon Power Plant, Unit Nos. 1 and 2, to change TS 3/4.9.14.1, "Spent Fuel Assembly Storage," TS 3/4.9.14.2, "Spent Fuel Pool Boron Concentration," TS 5.3.1, "Reactor Core—Fuel Assemblies," and TS 5.6.1, "Fuel Storage—Criticality," and add new TS 3/4.9.14.3, "Spent Fuel Assembly Storage—Spent Fuel Pool Region 1." The specific TS changes proposed are as follows:

(1) The proposed changes to TS 3/ 4.9.14 are:

(a) TS 3.9.14.1 and Figure 3.9–2 would be revised to allow the storage of spent fuel assemblies with initial enrichments up to 5.0 weight percent uranium-235 (U–235) in Region 2 of the spent fuel pool (SFP). Fuel pellet diameter would be considered in combination with initial enrichment and cumulative burnup.

(b) Editorial corrections to the titles of TS 3/4.9.14.1 and 3/4.9.14.2 would be made for consistency with the TS format.

(2) New TS 3/4.9.14.3 would be added. The new TS would include: (a) Requirements for acceptable fuel

storage in Region 1 of the SFP.

(b) An action statement, similar to that for TS 3.9.14.1, requiring suspension of all fuel movement and crane operations except to move the noncomplying fuel assemblies into an acceptable pattern. The action statement also requires verification of SFP boron concentration at least once per 8 hours.

(c) A requirement, similar to that for TS 4.9.14.1, for an evaluation that considers enrichment, boron content, and cumulative burnup of each fuel assembly before storage in Region 1 of the SFP.

(d) New Figure 3.9–3 for use in determining the acceptability of storing fuel in Region 1 of the SFP.

(3) The proposed changes to TS 5.3.1 are:

(a) The number of fuel rods in each fuel assembly, nominal length of each

fuel rod, and maximum fuel enrichment would be removed.

(b) The current allowance for fuel rod substitutions as justified by analysis would be clarified to specify that the analysis be performed using NRC staffapproved methods.

(c) An allowance to use a limited number of lead test assemblies in nonlimiting core locations would be added.

(d) The current specification requiring Zircaloy-4 fuel cladding would be changed to allow Zircaloy-4 or ZIRLO cladding.

(4) The proposed changes to TS 5.6 are:

(a) TS 5.6.1.1 would be renumbered TS 5.6.1 and the word "borated" would be replaced with "unborated."

(b) A new requirement would be added to specify the maximum fuel enrichment allowed to be stored in the fuel racks.

(c) TS 5.6.1.2 would be deleted.(5) The associated Bases would also be appropriately revised.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

a. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

Analyses were performed to verify that an increase in enrichment of the fuel from 4.5 weight percent U–235 to 5.0 weight percent U–235 would not result in an inadvertent criticality event in the new fuel storage racks or the SFP. The analyses indicate that for the new fuel racks, the  $k_{\rm eff}$  will remain below 0.95 if flooded with non-borated water, and below 0.98 if flooded with optimum-density aqueous foam. The analyses indicate that for the spent fuel racks, assuming credit for soluble boron in accident scenarios, the  $k_{\rm eff}$  will remain below 0.95 as required.

The increase in the fuel enrichment from 4.5 weight percent U–235 to 5.0 weight percent U–235 does not change any of the external dimensional characteristics of the fuel element, the fuel storage racks, or the SFP itself. The accidents originally evaluated considered those events that could lead to fuel damage and release of radioactive material primarily from mechanical means, such as physical impact on the fuel or the SFP. Because the physical design and methods of operation are the same as previously evaluated, there is no change in the probability of occurrence of such events.

The maximum spent fuel gap activity and the resulting offsite dose consequences after a postulated fuel handling accident are primarily dependent on fuel burnup, and are not significantly affected by an increase in fuel enrichment. For up to 5.0 weight percent U-235 and 60,000 MWD/MTU burnup, NUREG/CR-5009 indicates that fuel handling accident offsite doses could increase by a factor of 1.2, which indicates that doses would still remain within 10 CFR Part 100 limits.

The Generic Letter 90–02 Supplement 1 change to TS 5.3.1 clarifies the requirements associated with fuel reconstitution. It does not change the methodology that would be used to reconstitute fuel.

The use of ZIRLO cladding will not increase the probability or consequences of an accident, since it has improved mechanical properties such as a lower corrosion rate and reduced radiation-induced growth.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

b. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The physical and mechanical parameters associated with the fuel assemblies and spent fuel racks are the same as previously evaluated. Therefore, any malfunctions related to the physical aspects of fuel storage are the same as previously evaluated.

The conditions for fuel storage in the proposed new TS 3.9.14.3 provide new criteria for locations where a fuel assembly could be incorrectly placed. However, the incorrect placement of a fuel assembly has been analyzed, and would not cause an inadvertent criticality or any other accident.

The change to 5.0 weight percent U–235 does not result in physical alterations or changes to the operation of the plant, or change the method by which any safety-related system performs its function. The use of ZIRLO cladding does not result in a significant change to the plant.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

c. Does the change involve a significant reduction in a margin of safety?

The acceptance criteria of a  $_{keff}$  of 0.95 (or 0.98 for the new fuel rack optimum moderation accident) provides the margin to criticality. Analyses were performed that conclude that the proposed changes to allow up to 5.0 weight percent U–235 in the new and spent fuel racks meet the acceptance criteria. The use of ZIRLO cladding will not reduce the protection of the public health or safety, as indicated in the NRC's revisions to 10 CFR 50.44 and 50.46 (57 FR 39355).

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment requests involve no significant hazards consideration.

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