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PG&E Letter DCL-05-051

U.S. Nuclear Regulatory Commission
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Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2

Response to NRC Request for Additional Information Regarding License
Amendment Request 04-05, "Revision to Technical Specification (TS) Requirements
for Handling Irradiated Fuel in the Primary Containment and the Fuel Handling
Building and Selected Specifications Associated with Performing Core Alterations"

Dear Commissioners and Staff:

Pacific Gas and Electric (PG&E) Letter DCL-04-131, dated October 29, 2004, submitted License Amendment Request (LAR) 04-05, "Revision to Technical Specification (TS) Requirement for Handling Irradiated Fuel in the Primary Containment and the Fuel Handling Building and Selected Specifications Associated with Performing Core Alterations" to revise the TS requirements for handling of irradiated fuel in the containment and fuel handling building, and certain specifications related to performing core alterations. These proposed changes are based on analysis of the postulated fuel handling and core alteration accidents and transients for Diablo Canyon Power Plant Units 1 and 2. This proposed amendment to the TS is consistent with the NRC-approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-51, Revision 2, "Revise containment requirements during handling irradiated fuel and core alterations."

On April 5, 2005, the NRC staff requested additional information to complete their review of LAR 04-05. PG&E's responses to the staff's questions are provided in Enclosure 1.

The responses provided in this submittal do not affect the results of the technical evaluation or the no significant hazards consideration determination previously transmitted in PG&E Letter DCL-04-131.

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If you have any questions or require additional information, please contact Stan Ketelsen at (805) 545-4720.

Sincerely,

James R. Becker
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why/3664

Enclosures

cc: Edgar Bailey, DHS
Bruce S. Mallett
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PG&E Response to NRC Request for Additional Information Regarding License Amendment Request 04-05, "Revision to Technical Specification Requirements for Handling Irradiated Fuel in the Primary Containment and the Fuel Handling Building and Selected Specifications Associated with Performing Core Alterations"

NRC Request 1

In Section 4.0, "Reanalysis of the fuel handling accident (FHA) Inside Containment," of your submittal [License Amendment Request (LAR) 04-05], you provided the recalculated 30-day control room operator dose of 22.31 rem to the thyroid and 0.00757 rem to the whole body referencing License Amendments 155/155 for Diablo Canyon Units 1 and 2 issued on October 21, 2002.

You also stated that:

The current FHA inside containment analysis credits filtration by the CRVS [Control Room Ventilation System]. Per this LAR, the CRVS is not required to be operable and as a result, supporting analysis of the FHA inside containment has been revised to eliminate the credit taken previously for the CRVS filtration.

Subsequent to issuance of License Amendments 155/155 for Diablo Canyon Units 1 and 2, you requested a follow-up license amendment request by PG&E Letter DCL-03-034 dated April 2, 2003, to revise technical specification (TS) requirements for the control room ventilation system (CRVS), auxiliary building ventilation system, and fuel handling system ventilation system (FHBVS). The NRC approved your request and issued License Amendments 163/165 for Diablo Canyon Units 1 and 2 on February 27, 2004. In these license amendments, you voluntarily elected an option of a selective implementation of the alternative source term (AST) pursuant to 10 CFR 50.67 and Regulatory guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," in performing the FHA radiological consequence analysis.

In License Amendments 163/165, you also re-analyzed the FHA assuming no credit for the retention of fission products by the FHBVS or CRVS. The resulting radiological doses were 4.265 rem [Total Effective Dose Equivalent] (TEDE) at the exclusion area boundary, 0.112 rem TEDE at the low population zone, and 0.689 rem TEDE in the control room (see PG&E Letter DCL-03-095 dated August 8, 2003 and PG&E Letter DCL-03-149 dated November 13, 2003). Consequently, your License Amendments 163/165 became and remain as current Diablo Canyon Units 1 and 2 FHA design basis.

In current license amendment request (LAR), you stated that Regulatory dose limits will be satisfied with no credit taken for the retention of fission products by the containment building or the fuel handling building or the ventilation/filtration systems for those buildings and the control room.

Since you are taking no credit for the retention of fission products by the containment building in current LAR, the radiological consequence doses resulting from the FHA inside or outside containment building (e.g., fuel handling building) would be the same. All assumptions and parameters used for the FHA radiological consequence analysis in current LAR should be the same as those in License Amendments 163/165.

It appears that you may have overlooked your recent License Amendments 163/165. The thyroid and whole body doses you submitted in current LAR are not acceptable for the FHA since you have previously implemented the AST for that accident.

Please revise your LAR and resubmit it by:

- (1) establishing relevance of the current LAR to previous License Amendments 163/165 regarding the radiological consequence of the postulated FHA.*

PG&E Response

There are currently two Diablo Canyon Power Plant (DCPP) fuel handling accident (FHA) analyses, the FHA in containment and the FHA in the fuel handling building (FHB). The key assumptions for these analyses are very similar but not identical.

The accident in containment models the release as a very short duration release. In the analysis for this event, the airflow rate out of containment is set to an extremely high value to approximate a "puff" release. The operation of the control room ventilation system (CRVS) was assumed to be in the pressurization mode, so credit was taken for the charcoal filters in the CRVS. The analysis is consistent with the methods of Safety Guide 25 with the exception of the decontamination factor used for the iodine scrubbing in the reactor cavity and the use of dose conversion factors from International Commission on Radiological Protection 30 as implemented in Federal Guidance Reports 11 and 12. This analysis provides the basis for License Amendments (LAs) 155/155.

The accident in the FHB was subsequently revised to allow for changes in the operation of the ventilation systems. The revised analysis utilized assumptions that were similar to those used in the containment analysis, with some differences. These differences resulted in sufficient changes that PG&E elected to implement alternate source terms with that analysis. The primary difference in the new analysis was the assumption that there could be a loss of integrity in the FHB structure. Since the

release point is no longer the plant vent, the analysis required the use of different atmospheric dispersion coefficients for the exclusion area boundary. Other differences include the assumptions of the release, which is assumed to occur over two hours and is driven by the ventilation system flow rate. The analysis did not credit the operation of the CRVS in the pressurization (with charcoal filtration) mode. The FHA in the FHB analysis provides the basis in LAs 163/165.

The analyses supporting license amendment request (LAR) 04-05 do not replace the previous analyses. The only changes made in this LAR are to the exposures to the control room operators in the event of a FHA inside containment. Specifically, the analysis demonstrates that the control room operator exposures remain within the limits established in 10 CFR 50, Appendix A, General Design Criteria 19 without crediting the operation of the CRVS in the pressurization (with charcoal filtration) mode for the containment FHA analysis.

The consequences approved in LAs 163/165 are still applicable to DCPD for the FHA in the FHB. The control room portion of the containment FHA analysis required revision in order to support this LAR. The only change to the analysis was to remove credit for CRVS charcoal filtration. The calculated exposures for this accident are listed in the table below.

Location	Containment Analysis (LA 155/155)	FHB Analysis (LA 163/165)	LAR 04-05
EAB	60.62 rem Thyroid 0.4281 rem Whole Body	4.27 rem TEDE	No changes in either analysis
LPZ	2.521 rem Thyroid 0.0178 rem Whole Body	0.112 rem TEDE	No changes in either analysis
Control Room	11.56 rem Thyroid (with charcoal) 0.0072 rem Whole Body	22.3 rem Thyroid (without charcoal) 0.00752 rem Whole Body	22.31 rem Thyroid (without charcoal) 0.00757 rem Whole Body (Note: The dose results given apply to the containment FHA analysis)

EAB: Exclusion Area Boundary
LPZ: Low Population Zone

NRC Request 2

- (2) *verifying that the assumptions and parameters used and the radiological consequence doses (in TEDE) calculated in License Amendments 163/165 are still valid for the current LAR.*

PG&E Response

The assumptions and parameters used and the radiological consequence doses (in TEDE) calculated in LAs163/165 are still valid for the current LAR.

NRC Request 3

- (3) *stating that whether the current LAR affects the existing Diablo Canyon Units 1 and 2 design basis radiological consequence analysis for the postulated FHA.*

PG&E Response

The current LAR does not change the existing DCPD Units 1 and 2 design bases for the radiological consequences of postulated FHAs for offsite exposures. The FHA in the FHB and the FHA in the containment offsite exposures remain as approved previously by the NRC. The only change being made in this LAR is to update the calculated control room exposures for the FHA in containment. This change evaluates the impact on control room operators when no credit is taken for the charcoal filters in the CRVS for the containment FHA analysis.