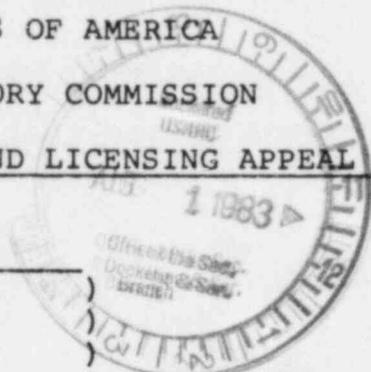


UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD



In the Matter of  
PACIFIC GAS AND ELECTRIC COMPANY  
(Diablo Canyon Nuclear Power  
Plant, Units 1 and 2)

) Docket Nos. 50-275 O.L.  
) 50-323 O.L.  
)  
)  
)  
)  
)

GOVERNOR GEORGE DEUKMEJIAN'S  
CONTENTIONS ON DESIGN QUALITY  
ASSURANCE

Governor George Deukmejian hereby submits the following contentions on construction quality assurance:

- I. Pacific Gas and Electric Company ("PG&E") and its major subcontractors for Diablo Canyon Units 1 and 2 ("Diablo Canyon") failed to timely develop and implement a systematic quality assurance/quality control ("QA/QC") program for the design of safety related structures, systems and components ("SS&Cs"), including the recent new design work, which:
  - A. Complies with the quality assurance requirements of criteria 1, 2, 3, 4, 5, 6, 7, 10, 16, 17 and 18 of Appendix B to 10 C.F.R. part 50 ("Appendix B"); and which

B. Assures that PG&E has complied with the license commitments set forth in the Diablo Canyon Final Safety Analysis Report ("FSAR") as required by 10 C.F.R. sections 50.57(a) and 50.34(b).

II. The Independent Design Verification Program ("IDVP") has failed to provide assurance, equivalent to that which would have been provided if PG&E and its major subcontractors for Diablo Canyon had timely developed and implemented a design QA/QC program which met the requirements of Appendix B, that PG&E has complied with the license commitments for the design of such SS&Cs set forth in the Diablo Canyon FSAR as required by 10 C.F.R. sections 50.57(a) and 50.34(b).

A. The scope of the IDVP's review is too narrow to provide assurance, equivalent to Appendix B compliance, that the design of safety related SS&Cs meets the license commitments for their design set forth in the Diablo Canyon FSAR.

1. The scope of the IDVP's review of the seismic design of safety related SS&Cs is too narrow.

a. It did not verify samples from each of the seismic design activities; and

b. It did not verify samples from each of the design groups in the design chain performing the seismic design activities it did review.

2. The scope of the IDVP's review of the non-seismic design of safety related SS&Cs is too narrow.
  - a. It did not verify samples from each of the non-seismic design activities;
  - b. It did not verify samples from each of the design groups in the design chain that performed the non-seismic design activities it did review; and
  - c. The number of samples obtained for the non-seismic design activities it did verify are insufficient to provide mathematically verifiable conclusions about even those activities.
- B. The IDVP was executed in a manner that failed to provide verification, equivalent to Appendix B compliance, that PG&E's design activities for safety related SS&Cs have and will meet the license commitments for their design set forth in the Diablo Canyon FSAR.
  1. The standards which the IDVP utilized to determine whether the seismic design activities it reviewed met PG&E's license commitments were improper.

- a. The IDVP has accepted substitution of mean measured performance of structures and materials in lieu of code-specified minima.
- b. The IDVP has accepted deviations from the equipment standards set forth in PG&E's license commitments without providing an adequate engineering justification for the change.
- c. The IDVP has failed to ascertain the root cause of the deviations from PG&E's license commitments and the regulatory requirements that it was and is discovering.
- d. The IDVP has failed to verify independently that all safety related structures, systems, and components at Diablo Canyon meet PG&E's licensing commitments.
- e. The IDVP has performed no independent verifications, but has merely checked data inputs to models used by PG&E.
- f. The IDVP has failed to verify that modeling by PG&E of soils properties for the containment building are justified and proper.
- g. The IDVP has failed to verify PG&E's computations for modes in the containment

building having frequencies between 20 and 33 HZ.

- h. The IDVP has failed to verify that use of inconsistent seismic techniques of modeling of accelerations, displacements, and shell forces in the containment building is justifiable and proper.
- i. The IDVP has failed to verify that failure by PG&E to use two horizontal components in its seismic modeling of the containment building for the DE and DDE, as it did for the Hosgri, is justifiable and proper.
- j. The IDVP failed to verify that use by PG&E of inappropriate and potentially dangerous stress factors and load factors for steel still used in the containment building, is justifiable and proper.
- k. The IDVP has failed to verify that PG&E's failure to specify all damping values used in modeling of each mode in the containment building, is justifiable and proper.
- l. The IDVP has failed to verify that the values used by PG&E in modeling soils properties for the auxiliary building are correct and properly used.

- m. The IDVP has failed to verify that all damping factors used by PG&E in modeling of the DE for auxiliary buildings are conservative and proper.
- n. The IDVP has failed to verify that all stress values for concrete in shear walls used by PG&E in modeling the auxiliary building are conservative and proper.
- o. The IDVP has failed to verify that PG&E's modeling of the crane in the turbine building at full load is complete, covers all cases, and is conservative and proper.
- p. The IDVP has failed to verify that PG&E's use of the double algebraic sum method of calculation, rather than the square root of the sum of the squares method, is justifiable and properly done.
- q. The IDVP has failed to verify that PG&E's modeling of torsion factors by differing techniques for different buildings is conservative and properly done.
- r. The IDVP has failed to verify how hydrodynamic forces were computed by PG&E in its modeling of the intake structure, and

that such computation was properly and correctly done.

- s. The IDVP has failed to verify that PG&E's use in modeling the intake structure of different models for non-linear vertical dynamic amplification and for horizontal seismic loading, and PG&E's method of combining their responses, are justifiable and properly done.
  - t. The IDVP has failed to verify that PG&E's use of ductility factors for steel and concrete in modeling the intake structure are conservative and properly done.
2. The standards which the IDVP utilized to determine whether the non-seismic design activities it reviewed met PG&E's license commitments were improper.
- a. The IDVP has accepted deviations from the equipment standards set forth in PG&E's license commitments without providing an adequate engineering justification for the changes.
  - b. The IDVP has failed to ascertain the root cause of the deviations from PG&E's license commitments that it was and is discovering.

3. The IDVP has no systematic program for verifying that the design of equipment supplied to PG&E from its subcontractors met PG&E's license commitments for such equipment.
  - a. The IDVP has failed to verify whether equipment and components supplied to PG&E by PG&E's subcontractors met all seismic design requirements.
  - b. The IDVP has failed to verify whether equipment supplied to PG&E by PG&E's subcontractors met all non-seismic design requirements.
- C. The IDVP has failed to provide assurance, equivalent to Appendix B compliance, of the implementation of a corrective and preventative action program that is sufficient to assure that the design deficiencies that have been uncovered do not exist in other, unexamined portions of the plant's design or will not be repeated in future design documents.
  1. The IDVP, has failed to require PG&E to implement a corrective and preventative action program that is sufficient to assure that the seismic design deficiencies that have been uncovered do not exist in other unexamined portions of the

plant or will not be repeated in future design documents.

- a. It has failed to look for the root cause of the discrepancies it has found.
  - b. It has failed to recognize the generic nature of a number of the seismic design discrepancies uncovered.
2. The IDVP has failed to require PG&E to implement a corrective and preventative action program that is sufficient to assure that the non-seismic design deficiencies that have been uncovered do not exist in other, unexamined portions of the plant or will not be repeated in future design documents.
- a. It has failed to look for the root cause of the discrepancies it has found.
  - b. It has failed to recognize the generic nature of a number of the non-seismic design deficiencies uncovered.
3. The IDVP has failed to require PG&E to implement a corrective and preventative action program that is sufficient to assure the deficiencies in the design documents of its equipment subcontractors do not exist in the design documents of contractors whose work was not

examined and will not occur in the design work of future subcontractors.

D. The IDVP is not and will not be able to assure, in a manner equivalent to compliance with Appendix , that PG&E has satisfactorily implemented the design modifications it has requested that PG&E perform.

1. The IDVP has no systematic program for reviewing whether the seismic design modifications it has requested that PG&E perform have occurred.

2. The IDVP has no systematic program for reviewing whether the non-seismic design modifications it has requested that PG&E perform have occurred.

III. PG&E's Internal Technical Program ("ITP") does not provide assurance, equivalent to Appendix B compliance, that PG&E has and will meet its license commitments for the seismic design of SS&C's at Diablo Canyon.

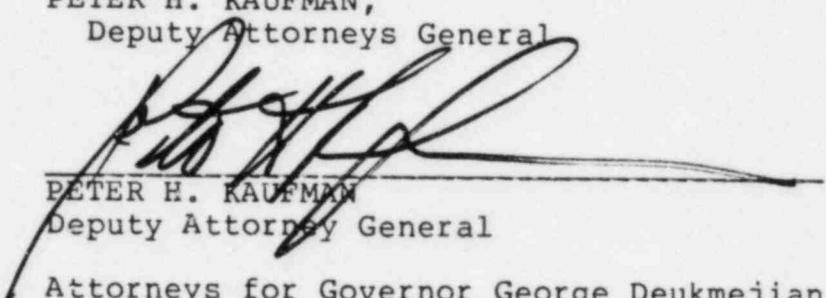
IV. PG&E and its major subcontractors failed to develop and implement in a timely fashion a QA/QC program for the design of important to safety but not safety related SS&Cs at Diablo Canyon which met the requirements of GDC-1 of Appendix A to 10 C.F.R. Part 50 ("Appendix A").

\* \* \* \* \*

V. The IDVP has not and will not provide any assurance, equivalent to Appendix A compliance, that the design of important to safety but not safety related SS&Cs at Diablo Canyon meets the regulatory requirements for the design of such equipment.

DATED: JULY 15, 1983

JOHN K. VAN DE KAMP, Attorney General  
of the State of California  
ANDREA SHERIDAN ORDIN,  
Chief Assistant Attorney General  
MICHAEL STRUMWASSER,  
Special Counsel to the Attorney General  
SUSAN L. DURBIN,  
PETER H. KAUFMAN,  
Deputy Attorneys General



PETER H. KAUFMAN  
Deputy Attorney General

Attorneys for Governor George Deukmejian