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.

ANSWERS TO JOINT INTERVENORS'
FIRST SET OF INTERROGATORIES TO THE IDVP

INTERROGATORY NO. 1

Sampling was used, or is being used, as part of the verification process for the following ITR's, listed in numerical order: 7, 11, 12, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 37, 45, 46, 47, 48, 49, 50, 51, 54, 55, 56, 57, 58, 59, 60, 61, 63, 67 and 68. Sampling has not been used for ITR's 1, 2, 3, 4, 5, 6, 8, 9, 10, 13, 16, 29, 34, 35, 39, 40, 41, 42, 43, 44.

Certain of these ITR's report the verification effort on the initial sample defined by one of the IDVP Program Management Plans. Specifically, the definition and use of the initial samples are established by IDVP Phase as follows:

Phase I: ITR's 7, 11, 12, 15, 30, 31, 32, 33 and 37.

Phase II: ITR's 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28.

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Other ITR's concern additional sample/verification efforts which are generally defined by the Phase I Program Management Plan with additional definition contained in ITR-1. These are ITR's 17 and 50 and the revisions to ITR's 31, 32 and 33.

Still other ITR's report on the verification of DCP Corrective Action Program efforts, or the other DCP activities which have been verified by the IDVP. The definition and use of such samples are described in the IDVP Program Plans, and further description is included in ITR's 8, 34 and 35. The results of the verification are reported as follows:

ITR's 9 & 35: 51, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 67 and 68.

ITR 34: 45, 46, 47, 48 and 49.

Further discussion of how sampling was used is contained in Section 3.5 of the IDVP Final Report. Each of the ITRs in which sampling was used contains further discussion of the way in which sampling was used and the conclusions of the IDVP. Overall IDVP conclusions and evaluations are presented in Sections 2 and 6 of the IDVP Final Report.

INTERROGATORY NO. 2:

(a) The size of each sample is generally defined by the IDVP Program Management Plans and by the programmatic ITR's (1, 8, 34 and 35), and defined in detail by each ITR identified in the answer to Interrogatory No. 1 as using sampling. In each case, the sample was selected on engineering judgment considering the knowledge of

the senior IDVP participants of PWR's and of the verification activities performed prior to the selection of the sample.

(b) The IDVP did not obtain a statistical "confidence level." As a result of the IDVP program, including the sampling and the expansions of sampling provided for by the Programs Plans, the IDVP was able to achieve reasonable assurance as to the adequacy of the DCNPP-1 design for the reasons described in the IDVP Final Report, particularly Section 6.2 thereof.

(c) The total population of the PG&E design effort being verified is generally identified by Section 4.1.2 of the IDVP Final Report. Specifically:

(i) Section 4.1.2.1 identifies the total population of safety-related systems from which the sample applicable to the 12 Phase II initial sample ITR's was selected. The basis for the determination that this sample was representative is set forth in the Phase II Program Plan. As to the 5 ITR's (45, 46, 47, 48 and 49) which resulted from the verification activities defined by ITR 34, the IDVP reviewed 100% of the DCP methodology and the IDVP selected its sample to verify implementation based on engineering judgment.

(ii) Section 4.1.2.2 identifies the total population of safety-related structures from which the

initial sample reported in ITR 6 was selected, with the basis for the selection being as defined by the Phase I Program Plan. The structure-related verifications performed in accordance with ITR's 8 and 35, and reported by ITR's 54, 55, 56, 57 and 58, include 100% of the structures, with the specific implementation verified being described in the ITR's. The sample was established on the basis of engineering judgment. ITR's 50 and 51 consider the containment annulus structure internal to the containment building; and the samples considered were established on the basis of engineering judgment and verified as described by the ITR's.

(iii) The remaining ITR's applying sampling considered components for which PG&E was responsible for the design. As stated in Section 4.1.2.3 of the IDVP Final Report, the total population was the components included in the systems for which PG&E was responsible. The specific sample verified is identified in each of these ITR's, and the sample was established on the basis of engineering judgment. In some cases the numerical value of the total population is identified in the programmatic document or in the ITR; in other cases the IDVP has not established the numerical size of the total population.

(d) The acceptance criteria for evaluation of safety-related structures, systems, and components were those of the license application, as set forth in the IDVP Program Plans and in the individual ITR's.

(e) See the answer to Interrogatory No. 2(d).

(f) The basis for expansion beyond the initial sample is set forth in the IDVP Program Plans and in Section 3.5 of the IDVP Final Report. Also, see ITR's 1, 8, 34 and 35 for additional discussion of the detailed expansions.

(g) The bases for not expanding the initial samples are set forth in the IDVP Program Plans, and each ITR contains a discussion of whether there was any need to expand the initial sample in that particular area.

(h) Those facts are summarized in the documents referenced in the answers to Interrogatories Nos. 2(f) and 2(g).

INTERROGATORY NO. 3:

The facts contained in each ITR, including those where sampling was not applied as well as those for which sampling was applied, provided the basis for the engineering judgments reached in Sections 2 and 6 of the IDVP Final Report.

INTERROGATORY NO. 4:

(a) See the answers to Interrogatories Nos. 1 and 2(a).

(b) The bases for the decision to employ the criteria used by the IDVP are described in the Program Plans and are

consistent with the provisions of the Commission Order and Staff Letter requirements which permit verification in specific areas to be performed on the basis of sampling. The IDVP considered the application of such engineering judgment to be appropriate for a design verification program.

INTERROGATORY NO. 5:

In dispositioning each EOI, the IDVP resolved specific concerns and any generic concerns arising out of such EOI, including any concerns related to the causation of the problems identified in the EOI. However, as IDVP has used the term "root cause," the IDVP did not identify the "root cause" of EOI's on an individual basis. The IDVP did determine the basic causes, or root causes, of the problems it identified on the basis of its entire effort, as described in Section 6.3 of the IDVP Final Report.

INTERROGATORY NO. 6:

Not applicable.

INTERROGATORY NO. 7:

In the case of every EOI, the IDVP ascertained whether or not there was a generic concern. Any such concern identified by the IDVP is discussed in the pertinent ITR and in the sections of the IDVP Final Report which address ITR's. Table E.2B of the IDVP Final Report correlates each EOI to the ITR in which it is discussed.

INTERROGATORY NO. 8:

(a) The IDVP reviewed three analyses by BNL: (1) BNL's analysis of the containment annulus and piping focusing on vertical response spectra (NUREG-CR-2834, BNL-51566) (the "BNL NUREG"), (2) BNL's analysis of the horizontal response spectra for the annulus, as described by BNL at the meeting on February 15, 1983 and (3) BNL's analysis of the buried diesel fuel oil tanks, as described by BNL at the meeting on June 17, 1983.

(b) (1) The IDVP's review of the BNL NUREG is described in Section 4.4.5.1 of the IDVP Final Report and in ITR-50.

(2) BNL's analysis of the horizontal response spectra was not utilized specifically in the IDVP's review because the concerns had been previously identifed and corrective action was being taken by the DCP.

(3) BNL's analysis of the buried tanks was used as background information in the IDVP verification effort described in Section 4.9.2.4 of the IDVP Final Report and ITR-68.

(c) (1) In the IDVP efforts documented in ITR-51, the IDVP verified that, in developing design response spectra, the DCP has addressed the deficiencies implied in the BNL NUREG.

(2) In the IDVP efforts documented in ITR-51, the IDVP verified that, in developing design response spectra, the DCP has addressed the deficiencies implied in BNL's analysis of horizontal response spectra.

(3) In the IDVP efforts documented in ITR-68, the IDVP verified that, in the qualification of the buried tanks, the DCP addressed the deficiencies in PG&E's previous analyses that were implied in BNL's analysis of the buried tanks.

(d) (1) The views of the IDVP with respect to the results recorded in the BNL NUREG are set forth in Section 4.4.5.1 of the IDVP Final Report and in ITR-50.

(2) The IDVP agreed with BNL's analysis of the horizontal response spectra to the extent that the IDVP agreed that the implied deficiencies had to be and were addressed in DCP's corrective action program.

(3) The IDVP neither agreed nor disagreed with the results of BNL's analysis of buried tanks, but assured that the implied deficiencies were addressed by DCP.

(e) See answer to Interrogatory No. 8(c).

INTERROGATORY NO. 9:

(a) (1) With respect to the BNL NUREG, the IDVP's views concerning any alleged inconsistencies are set forth in ITR-50.

(2) With respect to BNL's analysis of horizontal response spectra, the IDVP's opinion of the reason for the inconsistencies is that PG&E had not applied appropriate criteria to a portion of the annulus supports.

(3) Since only limited information was obtained concerning BNL's analysis of buried tanks, the IDVP has not reached an opinion as to the reasons for the inconsistencies.

(b) (1) Inadequacies in the PG&E analyses of vertical response spectra in the annulus area had been identified by the IDVP in EOI 977, issued on February 6, 1982, and verification of DCP reanalyses of the area was mandated by the IDVP's Program Plan.

(2) The IDVP had ascertained the inadequacies in PG&E's analysis of the horizontal response spectra in the annulus area prior to their disclosure by BNL.

(3) The IDVP was in the process of verifying the design of the buried tanks in parallel with BNL, and BNL presented its results before the IDVP's work was completed.

David B. Raskin

Maurice Axelrad
David B. Raskin

Attorneys For The Independent
Design Verification Program

Date: September 23, 1983

STATE OF MASSACHUSETTS

SS:

COUNTY OF MIDDLESEX

The undersigned, William E. Cooper, being duly sworn this 22nd day of September, 1983, upon his oath states that he is employed by Teledyne Engineering Services (TES) as a Consulting Engineer and is assigned as Project Manager for the DCNPP-1 IDVP for which Teledyne Engineering Services is the Program Manager, that he is informed on the matters of inquiry of the Joint Intervenors First Set of Interrogatories to the Independent Design Verification Program; that in answering the above and foregoing Interrogatories, he has caused information to be gathered from employees and officers of Teledyne Engineering Services, Robert L. Cloud Associates, Stone & Webster Engineering Corporation, and R.F. Reedy, Inc.; and that the answers to the above and foregoing Interrogatories are true and correct as he has been informed and verily believes.

William E. Cooper

William E. Cooper

September 22, 1983

William S. Moorman

WILLIAM S. MOORMAN
NOTARY PUBLIC
MY COMMISSION EXPIRES
AUGUST 6, 1987

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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CERTIFICATE OF SERVICE

I hereby certify that copies of the Independent Design Verification Program's Answers to Joint Intervenors' First Set of Interrogatories have been served on the following by deposit in the United States mail, first class, postage pre-paid, this 23rd day of September, 1983:*/

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