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BY EXPRESS MAIL

September 1, 1983



Nunzio Palladino, Chairman
Victor Gilinsky, Commissioner
Thomas Roberts, Commissioner
James Asselstine, Commissioner
Frederick Bernthal, Commissioner
United States Nuclear Regulatory
Commission
Washington, D.C. 20555

Dear Chairman Palladino and Members
of the Commission:

By letters dated July 15, 1983 and August 17, 1983, the Commission invited the parties to the above-entitled proceeding to comment on the Independent Design Verification Program ("IDVP") Final Report and the NRC Staff Supplemental Safety Evaluation Report ("SSER") No. 18 pertaining to reissuance of the suspended license for fuel loading and low power operation of Pacific Gas and Electric Company's ("PGandE") Diablo Canyon Nuclear Power Plant ("Diablo Canyon"), Unit 1. On behalf of the Joint Intervenors, this letter responds to that invitation. For the reasons outlined below, we believe that the Commission's consideration of the Staff's recommendation is premature, and, accordingly, we oppose reissuance of the suspended license.





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## I. STATUS AND SCHEDULE

From the date of the initial discovery of serious design and construction errors at Diablo Canyon, the Joint Intervenors have emphasized the importance of a comprehensive, technically competent, and truly independent review of the Diablo Canyon facility. Through letters to the Commission and the NRC Staff[1/], we have repeatedly urged the Commission to adhere strictly to those standards in order (1) to determine the full extent of the deficiencies in design and construction of the facility; (2) to ensure that all such deficiencies are fully corrected prior to any licensing decision by the Commision; and (3) to provide to the fullest extent possible a basis for public confidence in the safety of the facility and in the NRC as the responsible regulatory agency.

Our concerns are no less immediate today, two years after that initial discovery. To the contrary, the disclosure during the past 23 months of a breakdown in the quality assurance ("QA") programs for both seismic and nonseismic design, as well as construction, and the unabated discovery of resulting deficiencies in the "as-built" facility, have confirmed the fears of local residents that Diablo Canyon poses a continuing threat to their health and safety and that of their families and friends. These disclosures have established beyond question the absence of even minimally adequate QA/QC programs for seismic and nonseismic design throughout the peak period of Diablo Canyon design and

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1/ See note 12 infra.

construction,2/ and they have caused PGandE to undertake the recalculation and review of 100% of the facility's seismic design. Further, they have necessitated major reanalyses of nonseismic safety-related systems and components and have, according to NRC Director of Licensing Eisenhut, led to "massive amounts of modifications in the plant,"3/ requiring a larger on-site workforce (over 7,000 workers) than at any time in the history of the facility.4/ And, because of the undeniable significance and breadth of the errors, they have compelled reopening of the record by the Appeal Board on the issue of design QA based on a stipulation of all parties that the Joint Intervenors and the Governor of the State of California have satisfied the standards for reopening -- namely, significant new evidence which, if known, initially,

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2/ R.F. Reedy, Quality Assurance Review and Audit Report, Phase I (March 8, 1982) ("the PGandE Quality Assurance program for design work was not adequate in areas of policy, procedures and implementation"); NRC/IDVP/PGandE Meeting Transcript, at 24-25 (PGandE concession that no basis for a distinction existed between the programmatic requirements for seismic and nonseismic design contracts during the period when Diablo Canyon was essentially completed prior to 1979). See discussion infra at n.13.

3/ NRC/IDVP/DCP Meeting Transcript, at 77 (January 13, 1983).

4/ In the Matter of Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), Nos. 50-275, 50-323, Hearing Transcript, at 655-57 (July 21, 1983) (testimony of PGandE Field Construction Manager).

would have changed the result.5/

Despite the two years that have intervened since the disclosures began, however, there remain numerous unresolved questions and yet incomplete aspects of the various design and construction reviews being conducted by PGandE or the Diablo Canyon Project ("DCP"), by the ostensibly "independent" auditors that it selected, and by the NRC Staff. Design analyses continue to be redone, IDVP and NRC reviews of "completed" analyses are still in progress, modifications to the safety-related structures, systems, and components continue to be designed and implemented, verifications of the as-built modifications have only begun, and completion of the

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5/ In the Matter of Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-___, Memorandum and Order, at 2-3 (April 21, 1983); see also id., ALAB-___, Order, at 4 (August 16, 1983), where the Appeal Board stated:

> Normally an effectively functioning design quality assurance program ensures that the design of a nuclear power plant is in conformance with the design criteria and commitments set forth in the applicant's PSAR and FSAR. In the case of Diablo Canyon, however, this confidence has been seriously eroded by the existence of significant evidence that the design quality assurance program was faulty (i.e., it failed to comply with 10 C.F.R. Part 50, Appendix B). Hence, there is now substantial uncertainty whether any particular structure, system or component was designed in accordance with stated criteria and commitments. (Emphasis added.)

NRC Staff's own review is necessarily dependent upon completion of the ongoing PGandE and IDVP reviews. And, perhaps most notably, the reopened public hearings on design QA -- required by the Atomic Energy Act and the Administrative Procedure Act to supply the evidentiary basis for the 10 C.F.R. 50.57(a) licensing findings -- have not even begun.6/

Under such circumstances, Commission consideration of the NRC Staff's recommendation on reissuance of the suspended low power license is unquestionably premature. Although the NRC Staff's SSER 18 provides a good summary of the various aspects of the review to date, it portrays most graphically the obviously anticipatory nature of the Staff's approval. In virtually every section of the review -- particularly in the area of seismic design -- the Diablo Canyon design verification is incomplete. As is evident from the attached 24-page compilation of items stated in SSER 18 to be yet incomplete (Exhibit A hereto), the work remaining to be done as part of the review and in modification of the plant itself is no mere detail, but is in fact the very heart of the review. For example, the seismic review remains incomplete for the Unit 1 containment, the auxiliary building, the fuel handling building, the turbine building, and even for the Unit 1 containment annulus in which the initial reversed diagram

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6/ Pending as well are motions filed by the Joint Intervenors and Governor Deukmejian, representing the State of California, to reopen the proceeding on the issue of construction QA. Extensive documentation has been submitted, and a limited evidentiary hearing was held in July to determine whether the motion should be granted. The Appeal Board has yet to issue a decision.

error was discovered in September 1981. In the area of nonseismic design, a number of matters in critical areas of the plant remain unresolved, including the jet impingement effects of postulated pipe ruptures inside containment and the adequacy of rupture restraints inside and outside containment.7/ Because so many questions remain, the Staff has already planned a further supplement to the SER to address the range of issues remaining to be resolved. Thus, the Staff's SSER 18 is, at best, no more than a summary and status report.

Nor does the IDVP Final Report provide a more definitive picture of the verification effort. Issued in installments rather than as a comprehensive document, the IDVP Final Report is literally permeated with the phrases "to be supplemented" and "to be continued," and with the reservation that "the IDVP intends to formulate a final conclusion . . . when the IDVP verification has been completed." Particularly illuminating is the following disclaimer by the IDVP at section 7.1 of the Final Report, entitled "Limitations":

> The date of issuance of this report, June 30, 1983, is as requested by the DCP. The DCP established this date by their letter to Staff of March 2, 1983. On March 1, 1983 the IDVP Program Manager was informed of the selection of the June 30, 1983 date and agreed, based upon his knowledge of the DCP and IDVP status, that that date was reasonable for schedule purposes. Despite subsequent slippages in the DCP and IDVP schedules, the DCP has continued the request that IDVP issue a final report on June 30, 1983. The IDVP has responded to the DCP request, and has prepared this report on that basis. (Emphasis added.)

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7/ See also SSER 18, at C.4-24 through 4-32.

Thus, the report is "final" in name only, and the reason for its issuance on June 30, 1983, according to the IDVP, was the insistence by the DCP that its schedule deadlines be met. This is a classic example of the concern repeatedly raised by the Joint Intervenors that PGandE's schedule has driven the audit to premature issuance of reports and conclusions, thereby jeopardizing both the independence and integrity of the verification effort.8/

Although the Joint Intervenors have been assured on several occasions by PGandE and the NRC Staff that PGandE's schedule is essentially irrelevant to the audit process, the premature request for and recommendation of a decision by this Commission to relicense the facility suggests a contrary conclusion. In the absence of clear and definitive conclusions regarding the adequacy of the design and construction of Diablo Canyon based on completed reviews, there is no basis for confidence that considerations of public safety are the controlling concern. Nor does the justification offered by PGandE for seeking reissuance of the suspended license at this time -- ostensibly to save 50 days prior to operation -- suggest that public safety, rather than scheduling, is its first and foremost consideration. Indeed, following PGandE's representation to the Commission last

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8/ See, e.g., the letters from the Joint Intervenors' counsel to Harold Denton, dated May 28, 1982, June 23, 1983, and August 10, 1983; see also the Joint Intervenors' comments at the September 9, 1982 meeting with the NRC Staff.

November that the three-step licensing approach would result in a saving of 50 days, closer examination by Darrell Eisenhut at a meeting in January 1983 established that PGandE had done no detailed evaluation to determine that estimate9/ and, further, that the three-step approach may in fact save PGandE nothing.10/

However desirable such a scheduling "cushion" may be under normal circumstances, the Joint Intervenors consider it patently inappropriate where, as here, a thorough and comprehensive review is essential to ensure safety and restore public confidence. Too often in the past PGandE has opted for haste when further study and greater attention to regulatory requirements were necessary. PGandE must not now be permitted to compound its past errors through pressure on the IDVP or the NRC for premature and anticipatory approval of its massive redesign program.

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9/ Meeting Transcript, at 30 (January 13, 1983).

10/ EISENHUT: First, what you are really characterizing, then, is that splitting Phase I into step one and two did not save you 50 days. It potentially gave you a cushion of 50 days.

FRIEND (DCP): All right, yes.

EISENHUT: You are really saying that this process has built in it, you believe, in the operation of the facility something on the order of 50 days between when you would need the license. It may, in fact, turn out to save you essentially nothing.

FRIEND (DCP): On that basis, that is correct. It may, in fact, save us nothing.

* * *

The Joint Intervenors believe that a licensing decision by the Commission at this time is neither warranted nor well advised. If there is a central lesson to be learned in this proceeding, it is the importance of thorough investigation and review before a licensing decision is made. PGandE has repeatedly demonstrated its willingness to provide confident assurances of compliance with all licensing criteria and regulations, only later to be discredited by subsequent events. The number of the errors, the extent of the redesign, and the breadth of the physical modifications, as well as the unprecedented level of manpower and activity required as a result, mandate particular scrutiny prior to a decision on reissuance of the suspended license. PGandE's facile promise of "no more surprises" should be seen for what it is: a dangerous invitation to the Commission to license Diablo Canyon before the evidence is in.

Finally, the Commission's November 19, 1981 Order explicitly established as a prerequisite to reissuance of the suspended license that PGandE provide "the results of an independent design verification program . . ." (emphasis added).11/ As the Staff's SSER 18 and the IDVP Final Report make eminently clear, those results cannot be provided because the audit is not yet complete. Thus, reissuance of the license at this time would be inconsistent with the Commission's suspension order establishing the independent audit. As a minimum, if the citizens of San Luis Obispo were entitled to an independent audit, they are certainly entitled to see it through to completion.

## II. REVIEW SCOPE AND IMPLEMENTATION

In addition to the foregoing overriding concern regarding completion of the verification program, the Joint Intervenors have a number of specific concerns regarding the scope and implementation of the IDVP itself, some of which have previously been raised with the Commission or the Staff but remain at least partially unresolved.12/ These include the following:

(1) Although the Phase I/Phase II dichotomy has been abandoned consistent with the Joint Intervenors' recommendation, the IDVP has continued to rely upon sampling rather than 100% reverification in its review of nonseismic structures, systems, and components ("SS&C's"). It has done so, moreover, despite PGandE's concession that no distinction existed between PGandE's seismic and nonseismic QA program requirements during the concession that no distinction existed between PGandE's seismic and nonseismic QA program requirements during the

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11/ Order Suspending License, Attachment 1, at 1 (November 19, 1981).

12/ See, e.g., letters from the Joint Intervenors' counsel to Denton, dated December 17, 1981; February 18, 1982; February 26, 1982; May 4, 1982; May 28, 1982; June 23, 1983; August 10, 1983; to the Commissioners, dated December 22, 1981; February 1, 1982; February 5, 1982; August 2, 1982; see also NRC Meeting Transcripts, dated February 17, 1982; September 9, 1982; November 10, 1982; January 13, 1983.

period of peak construction at Diablo Canyon.13/ Further, IDVP Program Manager Cooper stated in October 1982 that

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13/ EISENHUT: Okay. So really, not to belabor the point, I guess the other piece of the question is, is there any distinction pre-1978, is there any distinction that can be drawn between seismic service related and non-seismic service related from the standpoint of what PG&E required in the way of a seismic -- I mean in the way of a programmatic QA needs and requirements? Any distinction between seismic and non-seismic?

MENEATIS (PG&E): In what time frame again?

EISENHUT: Pre-1978.

MANEATIS: No, there was no distinction.

EISENHUT: No distinction.

MANEATIS: Like I said in my remarks, there is really no distinction in the programmatic requirements between non-seismic and seismic contract, there's no reason to have a distinction.

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EISENHUT: [N]ow of the fractions of work performed, was there an equal amount of the non-seismic work that was performed prior to 1978? I mean, was the majority of the -- let me put it another way. The majority of the seismic service related contract work was performed prior to 1978. Does that also hold for the non-seismic service related contract work?

FRIEND (DCP): I think that's correct.

MANEATIS: Essentially the plant was completed by 1979 and so I think the answer to your question was yes.

NRC/IDVP/DCP Meeting Transcript, at 24-25 (September 1, 1982) (emphasis added).

"on Phase II we are coming up with about the same number of significant items as on Phase I. . . ."14/ Given these findings, a 100% reverification of nonseismic SS&C's, rather than sampling, should be instituted, just as it was for seismic-related SS&C's.

(2) Neither the IDVP nor the DCP has reviewed non-safety-related SS&C's important to safety. In light of the multiplicity of errors disclosed to date, and consistent with GDC-1 of 10 C.F.R. Part 50, Appendix A, and Mr. Denton's November 20, 1981 memorandum,15/ all such components should be included within the verification program. This is particularly important in light of the NRC Staff's testimony at a recent licensing hearing in this proceeding that

> the license commitment we have from PGandE is to apply their quality assurance program for design and construction to safety-related structures, systems, and components . . . . We don't review a program for [non-safety-related] items.16/

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14/ NRC/IDVP/DCP Meeting Transcript, at 36 (October 19, 1982).

15/ Memorandum, Standard Definitions for Commonly Used Safety Classification Terms (November 20, 1981).

16/ In the Matter of Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), Nos. 50-275, 50-323, Hearing Transcript, at 864 (July 22, 1983) (testimony of Walter Haass).

(3) The construction quality assurance review by the IDVP was inadequate to provide the requisite assurance and should be expanded. For example, in contrast to the Reedy design QA review and comparison of the programs of PGandE and six subcontractors to the requirements of Appendix B, the IDVP CQA review covered only two contractors and failed to include any documented comparison of the programs to the Appendix B requirements. Further, the IDVP dismissed as insignificant the 29 deficiencies disclosed by the review rather than assessing their potential generic import for QA practices. Notably, the limited nature of the review -- visual inspection and document review -- was structured such that, almost by definition, significant findings would not result. The discovery of recent widespread deficiencies in the QA program of the H.P. Foley Company, one of the principal on-site contractors at the present time, suggests that significant QA deficiencies continue to exist even today.17/

(4) Both the IDVP and the Staff have failed to address the review criteria set forth in the Commission's November 19, 1981 Order. First, neither the IDVP Final Report nor SSER 18 identifies and fully addresses the

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17/ The IDVP CQA audit failed to discover the 14% nonconformance rate in the welding done on the Fuel Handling Building structural steel modifications in late 1982 and early 1983. See NRC Inspection Report and Notice of Violation, dated March 29, 1983. See also NRC Inspection Report and Notice of Violation, dated May 19, 1983, regarding series of allegations of construction QA violations of H.P. Foley Company.

basic cause of each of the design errors, including the basic reason for PGandE's noncompliance with applicable regulatory requirements. Significantly, the IDVP fails to highlight the failures of PGandE management as a basic cause of the QA breakdown, a cause emphasized by Roger Reedy in his design review and briefly alluded to by the NRC Staff in SSER 18.

Second, the IDVP failed to provide a comparison of nonseismic QA/QC procedures and controls with the related criteria of 10 C.F.R. Part 50, Appendix B. Such a comparison was done for Phase I in the Reedy Report, but, in disregard of the November 19, 1983 letter from Denton to Furbush, no similar review was conducted for nonseismic SS&C's.

Third, neither the IDVP nor the DCP established sampling criteria utilizing statistically valid sampling techniques, including the following:

(a) definition of the confidence level to be achieved and a statement of the basis for that level;

(b) explanation of the statistical basis for the sample size used in each case;

(c) demonstration that the sample is representative of the total population of the item sampled.

(d) definition of the acceptance criteria for each sampling effort; and

(e) specification of the criteria to be used for expansion of the sample.

The reliance by the IDVP and the DCP on subjective judgment in sampling is not an adequate substitute for valid statistical methods.

(5) The review by the IDVP of the DCP Corrective Action Program ("CAP") is incomplete, but the results to date suggest reason for concern. In recently issued EOI's, R.L. Cloud has found numerous examples of deficiencies in the corrective action effort, deficiencies which should be prevented by an effective QA program. These findings raise questions about the adequacy of the IDVP review of the QA program for the CAP in which the 24 "observations" were simply dismissed as having no generic impact. The verification of the CAP work should be fully completed before a decision on relicensing.

(6) Brookhaven National Laboratory's ("BNL") role should be expanded and its findings incorporated into the Diablo Canyon redesign. In each of the areas examined by BNL, significant concerns not previously addressed by the IDVP have been discovered. Given this history, the scope of the design verification program -- and, in particular, BNL's role -- should be expanded to provide an independent benchmark for the redesign work of the DCP. Because BNL has provided the only independent check of the DCP models, BNL should be retained to prepare an analysis and report on the Auxiliary and Turbine Buildings similar to its July 1982 report on the annulus area of the Unit 1 containment. Further, neither the IDVP Final Report nor the SSER 18 describes how, if at

all, BNL's findings have actually been applied at Diablo Canyon through changes to the DCP models, revisions in calculations, etc. In fact, the DCP's Dr. William White testified at a deposition on August 26, 1983 that the DCP had made no attempt to apply the BNL findings generically to other structures, systems, and components at Diablo Canyon.

(7) An expanded role by BNL is necessary to provide an effective check of the engineering assumptions and practices being utilized by the DCP. For example, when the Joint Intervenors and Governor Brown appeared before the Commission on November 10, 1982, Dr. Jose Roesset raised a concern regarding the unexplained use by the DCP of soil springs in the analysis of the Auxiliary Building. That concern remains unaddressed by the NRC, although listed as an open item in SSER 18. The reasons for such use, their effect on the analysis, and their consistency with NRC criteria and Reg. Guides should be addressed before concluding that the Auxiliary Building has been properly modeled.

(8) As we have previously noted in our comments to the Staff,[18] the IDVP has failed to report its findings in a manner that permits full scrutiny by other parties. The Interim Technical Reports are written in a cryptic and conclusory style, without adequate explanation of the IDVP's findings and the factual basis for them. Further,

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18/ See, e.g., Letter, Joint Intervenors to Denton, at 3-4 (May 28, 1982).

the practice of closing EOI's by simply combining them with others rather than resolving the concern is misleading in that it suggests resolution of an error or discrepancy when, in fact, essentially nothing has been done. Similarly, the practice of citing as a single EOI the redesign of an entire structure[19/] can easily be misunderstood to suggest that the deficiencies in the design and construction of Diablo Canyon have been few in number and minor in significance.

These concerns are illustrative of those that the Joint Intervenors continue to believe have not been adequately address by the IDVP or by the Staff. The IDVP, as originally instituted by the Commission, was intended as an organic process in which the scope of the review could be expanded in light of subsequent findings. Rather than validating the adequacy of the design, the review has continually uncovered new flaws, in both the seismic and nonseismic areas. In light of this, the concerns outlined above and the questions that give rise to them should be resolved before any decision by the Commission to reissue a license for Diablo Canyon.

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19/ For example, EOI 1014 (Containment Structure seismic reevaluation); EOI 1026 (Turbine Building seismic review); EOI 1097 (Auxiliary Building seismic reevaluation); EOI 1092 (Fuel Handling Building Seismic reanalysis and physical modificatons).

## III. LEGAL IMPEDIMENTS TO LICENSING

In light of the foregoing circumstances and concerns, the Joint Intervenors believe that, as a legal matter, a decision by the Commission to relicense Diablo Canyon at this time would violate both the Commission's own regulations and the Atomic Energy Act upon which they are based. The principal reasons underlying this belief are summarized briefly below.

First, the QA breakdown and resulting design and construction flaws disclosed during the past two years have undermined the factual basis for the findings required by 10 C.F.R. § 50.57(a) prior to the issuance of any license. As the Appeal Board found in its recent decision in the reopened design quality assurance proceeding, "there is now substantial uncertainty whether any particular structure, system or component was designed in accordance with stated criteria and commitments."20/ Specifically, as necessarily follows from the Appeal Board's order reopening the record, there is no basis in the record to find (1) that Diablo Canyon has been constructed, and will operate, in conformity with the application and Commission's regulations (§ 50.57(a)(1)-(2)); (2) that reasonable assurance exists that the activities authorized can be conducted without endangering the public and in conformity with the regulations (§ 50.57(a)(3)); and (3) that the issuance of the license will not be inimical to the health and safety of the public (§ 50.57(a)(6)).

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20/ In the Matter of Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-__, Order at 5 (August 16, 1983). See note 5 and accompanying text supra.

In light of the long recognized importance of quality assurance in nuclear power plant design and construction, see, e.g., In the Matter of Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-106, 6 AEC 182, 183 (1972); In the Matter of Duke Power Company (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-128, 6 AEC 399, 410 (1973), the undeniable breakdown of QA/QC during the design and construction of Diablo Canyon cannot simply be ignored without a full demonstration on the record that an effective substitute for regulatory compliance has provided the factual basis for the § 50.57(a) findings. Until the adequacy, findings, and conclusions of the IDVP have been tested through the adjudicatory process, the requisite evidentiary basis for licensing does not exist.

Second, the action being considered by the Commission -- lifting the suspension on an operating license -- entails a formal public hearing prior to taking of the action. In addition, because PGandE has applied for an amendment extending the expired one-year term of the license to three years from date of issuance, and because the Joint Intervenors have filed a timely request for hearing, an independent basis exists for the required hearing prior to a Commission decision authorizing fuel loading and operation under the license. Section 189(a) of the Atomic Energy Act, 42 U.S.C. § 2239(a), is explicit in its guarantee of a public hearing "in any proceeding under this chapter for the . . . suspending, . . . or amending of any license . . . ." Thus, both actions being considered by the Commission fall within the scope of the § 189(a) hearing guarantee.

In a situation analogous to that presented here, the Commission adopted precisely such a procedure. After suspending the operating authority under the license for TMI-1, In the Matter of Metropolitan Edison Co. (Three Mile Island Nuclear Power Plant, Unit 1), No. 50-289, Order (July 12, 1979), the Commission held that a formal hearing was required prior to restart of the facility. Id., 10 N.R.C. 141, 142 (August 9, 1979). In so doing, it provided the following explanation for its decision:

> The Commission has determined that hearing and decision with review thereof . . . on the issues specified in this order is required and that such hearing, decision and review on the issues relating to the actions required prior to restart of the facility must be completed prior to any Commission Order lifting the suspension of operation.21/

In light of the circumstances in this proceeding, including the degree of significance of the issues raised, the procedure outlined and adopted by the Commission above is warranted here both as a matter of law and prudence.

Further, the principle is equally well established that the license amendment sought by PGandE and necessitated by the license suspension falls within the scope of 189(a). See

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21/ Notably, prior to the Commission's decision, the NRC Executive Legal Director advised the Commission that "Section 189(a) of the Act does afford interested persons a right to a formal hearing in 'any proceeding . . . for the . . . suspending . . . of any license.' The matter at hand involves just such a proceeding." Memorandum, Shapar to Commission, at 2 (July 25, 1979).

Brooks v. Atomic Energy Commission, 476 F.2d 924 (D.C.Cir. 1973); Sholly v. U.S. Nuclear Regulatory Commission, 651 F.2d 780 (D.C.Cir. 1980), vacated on other grounds, ___ U.S. ___ (February 22, 1983), on remand, __ F.2d __, (April 4,1983). In Sholly, the D.C. Circuit Court of Appeals noted explicitly that the time for hearing on an amendment was before any decision:

> By requiring a hearing upon request whenever a license is "grant[ed], suspend[ed], revok[ed], or amend[ed], Congress apparently contemplated that interested parties would be able to intervene before any significant change in the operation of a nuclear facility.

651 F.2d at 79.22/ On remand, the court of appeals made clear that the only circumstance in which a hearing on an amendment may be held after its effective date is where "no significant hazards considerations exist." 19 ERC 1055, 1056. Thus, under the circumstances of this case, § 189(a) requires a hearing prior to a decision on the proposed license amendment.

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22/ Although the initial court of appeals decision was subsequently vacated by the Supreme Court, the Court did so on grounds of mootness unrelated to the issue presented here. The decision was mooted by the enactment of Pub. L. 97-415, 96 Stat. 2067 (1983), which amended § 189(a) of the Atomic Energy Act to permit the NRC to make immediately effective an amendment upon a finding that no significant hazards consideration is involved.

Such is clearly not the case here where (1) the amendment was necessitated by the discovery of major defects in the facility and (2) approval of the amendment is a prerequisite to fuel loading and operation of the nuclear facility.

Finally, there is a substantial legal question whether the suspended license can under any circumstances be amended in light of the extended period that has elapsed since its expiration in September 1982. Although PGandE has requested an extension under 10 C.F.R. § 2.109,23/ under similar circumstances in Bankers Life & Casualty Co. v. Calloway, 530 F.2d 625 (5th Cir. 1976), cert. denied, 429 U.S. 1973 (1977), the Fifth Circuit Court of Appeals rejected the argument that such a provision permits an unlimited extension of the license term where such extension is not required for consideration of the renewal application. The court stated:

> [T]he kind of case that the statute was meant to cover was that in which time exigencies within the agency prevent it from passing on a renewal application, when an activity of a continuing nature such as radio broadcasting or shipping services is involved.
>
> By contrast, in the case before us, time exigencies played no part in the Corps' refusal to renew. Instead a substantive problem arose with the application which had to be resolved before the Corps could grant a new permit.

436 F.2d at 1099 (emphasis added).

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23/ That regulation provides:

> If, at least thirty (30) days prior to the expiration of an existing license authorizing any activity of a continuing nature, a licensee files an application for a renewal or for a new license for the activity so authorized, the existing license will not be deemed to have expired until the application has been finally determined.

In this proceeding, a year has elapsed since the license term expired, and the Commission has taken no action, not because of "time exigencies" but because of the "substantive problem" associated with the new factual evidence that PGandE was not entitled to the license even in the first instance. Thus, just as the court in Bankers Life concluded that the license had expired, PGandE's license has also expired and cannot be amended.

## CONCLUSION

For all of the foregoing reasons, the Joint Intervenors submit that a Commission decision reissuing the suspended license for any purpose would be premature and in violation of the law. Moreover, such an action would invite subsequent discoveries of additional design and construction errors at Diablo Canyon, discoveries that would significantly undermine the confidence and assurance that the license suspension and IDVP audit were intended to achieve.

The local residents who live in the vicinity of Diablo Canyon are entitled to the full measure of protection of their health and safety by this Commission. Until the audit is completed and all modifications to safety-related SS&C's installed and verified, that entitlement requires that no license for Diablo Canyon fuel load or operation be issued. Only after PGandE has demonstrated on the record through formal public hearings that it has satisfied all of its

licensing commitments under the regulations should reinstatement of the suspended license be considered by the Commission.

Very truly yours,

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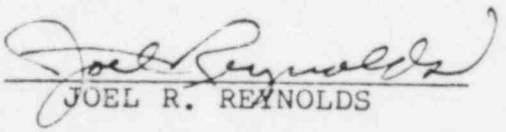
By 
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# COMPILATION OF INCOMPLETE ITEMS DRAWN FROM SSER 18

## 2. Quality Assurance

### 2.2 Design Process Quality Assurance Audits

C.2-2 EOI 7002 (Jet impingement on components). DCP will perform a complete reanalysis. IDVP will review a sample of the analysis and report results in a future ITR.

## 3. Seismic Design Verification Effort

### 3.1 Introduction

C.3-1 Some concerns raised by DCP studies regarding structures and piping systems are still unresolved.

C.3-2 Technical audits conducted by Staff and BNL regarding working and final documents raised concerns yet to be resolved.

C.3-2 Impact on seismic performance of 42 review comments made by Blume/URS internal review are yet to be determined by ITP and IDVP.

### 3.2 Structures

#### 3.2.1 Containment Annulus Structure

C.3-7 EOI 1014, Error Class A/B, (Annulus steel structure, and interior and exterior concrete structure) -- incomplete status, still open.

EOI 1014 has been combined with several other EOI's.

C.3-8 IDVP verification of annulus structure is incomplete. Unresolved issues are: (1) horizontal floor response spectra accuracy, and (2) adequacy of modifications in progress.

C.3-9 Evaluation and conclusions regarding annulus structure will be reported in a future ITR when all analyses have been evaluated by the IDVP.

C.3-9 Staff review of IDVP annulus analysis is not yet complete. IDVP spectra analysis calculations need redefining. Staff will reach conclusions after review of future ITR's.

C.3-9 IDVP review of DCP annulus reverification is incomplete. Staff position is that DCP use 20-Hz cutoff frequency for generation of floor response spectra needs verification. Staff will reach conclusion after review of future ITR's.

C.3-9 Conclusion: IDVP annulus review is incomplete; additional information wil be submitted at a later date. Staff considers 20-Hz cutoff frequency for generation of floor response spectra an open issue and

requires that the IDVP review DCP verifications and make a future report.

3.2.2 Containment Interior Structure

C.3-11 IDVP review and verification is not complete. Unresolved item: Calculation of interior structure horizontal floor response spectra.

C.3-11 IDVP Final conclusions on qualification of containment interior structure and polar crane will be reported in a future ITR.

C.3-13 Staff will give a conclusion on the containment interior structure after it reviews the IDVP ITR on verification of DCP corrective action.

3.2.3 Containment Exterior Shell

C.3-15 DCP verification of the containment exterior is incomplete. Unresolved issue: analysis and qualification of the containment shell in the vicinity of the equipment hatch.

C.3-17 IDVP will provide its results on the containment exterior verification effort in a future ITR. Unresolved issue: analysis and qualification of the containment shell in vicinity of the equipment hatch.

C.3-17 DCP containment verification: DCP should justify use of AISC code for analysis and

local yeilding of steel plates.

C.3-17 Staff will formulate its conclusions regarding the containment exterior shell after review of a future ITR.

3.2.4 Auxiliary Building

C.3-19 EOI 1097, error Class A or B (non-availability of the floor response spectra above el 163 ft.), is combined with several other EOI's. Will be open until IDVP review of the DCP reanalysis.

C.3-21 IDVP parametric studies on response of the building to earthquake did not agree with results of DCP studies.

C.3-21 Limited IDVP seismic analysis identified several areas of concern (ITR 6).

C.3-21 Staff found some questionable areas in the limited IDVP seismic analysis of the PGandE Hosgri analysis: (1) use of inappropriate formulation to compute soil springs for embedment effects; (2) calculation methods inconsistent with seismic model assumptions; (3) soil data in analysis should be verified. Results of IDVP evaluation of the DCP reanalysis will be given in a future ITR.

C.3-22 Unresolved issues in the DCP seismic analysis: (1) seismic model used for

analysis has many simplifications and inherent assumptions, and further explanations are needed; (2) use of different code versions was inappropriate in making evaluations of floor slabs; (3) a discrepancy between IDVP and DCP in the soil sensitivity study should be reconciled; (4) values of soil properties should be resolved.

C.3-23 IDVP did not include the crane in the dynamic analysis sample, and did not review the DCP model used to analyze modification requirements.

C.3-24 Four EOI's pertaining to differences between design drawings and as-built configuration were combined in EOI 1092. EOI 1092 is open, and will be closed by IDVP final verification of the as-built structure.

C.3-24 IDVP verification of the fuel handling building was incomplete as of June 30, 1983. The IDVP will formulate final conclusions when DCP modifications and IDVP verifications of as-built conditions against design are complete. IDVP will report results in a future ITR.

C.3-25 Concerns were raised by NRC, IDVP and DCP meetings regarding use of output from the auxiliary building analysis as input to the

base of the fuel handling building. The DCP reported studies had justified this use, but the studies were not contained in the DCP Phase I report.

C.3-25 IDVP sampling of the fuel handling building identified inconsistencies in the structural design analysis, and highlighted areas of concern. Verification effort of the IDVP is incomplete because the DCP is still performing reanalysis and modifications. The IDVP currently is reviewing DCP calculation packages. When review and verification is complete, the IDVP will present results in a future ITR.

C.3-26 Regarding fuel handling building analysis: (1) DCP will document more completely in the Phase I Report the validity of the use of auxiliary building analysis output as input to the base of the fuel handling. (2) DCP will justify the reduction in degrees of freedom contained in the dynamic models before dynamic analysis was performed.

C.3-26 Conclusion: IDVP investigation did not identify omission of allowance for accidental eccentricity as a concern.

DCP will do a parametric study to show whether floor slab motions can be applied to

the fuel handling building model if accidental torsion is omitted. The IDVP will evaluate results.

Use of a degree-of-freedom reduction procedure may not be appropriate, and may lead to erroneous member forces in the structure. DCP will demonstrate and IDVP will verify that the reduction method is correct.

3.2.6 Intake Structures

C.3-27 IDVP verification did not include separate analyses such as computation of individual member stresses, and generation of dynamic models.

C.3-27 Three EOI's were combined to make EOI 1022, error Class A/B (intake structure), and EOI 1022 is still open.

EOI 1022 includes as-built configuration of the crane, discrepancies between the Hosgri and Blume May 1979 report, and use of inappropriate floor response spectra for AWS pump seismic input.

C.3-28 The IDVP will report the results of its review of DCP corrective actions in a future ITR. Sliding, overturning, and soil bearing pressure calculations are still under review.

3.2.7 Outdoor Water Storage Tanks

C.3-31 Staff has raised questions about ITR 16 (soil properties) which have not been resolved.

3.2.8 Turbine Building

C.3-34 DCP work contains these unresolved issues:

(1) capacities of certain cross-braced exterior panel;

(2) modifications planned by the DCP to stiffen the floor at el 119 ft.

C.3-36 IDVP verification of the DCP analysis consisted of sampling the DCP analysis. IDVP verification is not complete and will be reported in a future ITR. Staff will evaluate the IDVP verification when a future ITR is issued.

C.3-36 DCP must provide additional information regarding these concerns:

(1) Resolution of discrepancy between design criteria, which combines dead, live and earthquake forces, and summary tables showing such a combination is not indicated.

(2) Method of modeling the roof truss and obtaining truss responses is questionable since maximum response of

the two may not be comparable.

(3) Effect of the contiguous exterior wall that connects to all floors was not investigated.

(4) Differences in steel frame modeling and roof truss need verification. The reason for changing the roof truss to uniaxial members should be given. A basis should be provided for the differences of degrees of freedom in Model 1 and Model 2.

(5) Statement in the PGandE Phase I Final Report concerning alternate procedures needs to be explained.

(6) Statement in the PGandE Phase I Final Report concerning ground motion components needs explanation.

(7) Use of AISC Code 8th edition is in violation of the acceptance criteria in the FSAR. Use of increased allowable stresses should be justified.

C.3-37 Final conclusions will be based on Staff review of IDVP future ITR.

## 3.3 Piping and Piping Supports

### 3.3.1 Large-Bore Piping Supports

EOI's 1126, 1133, 1135, and 1137. IDVP will formulate a final conclusion when its verification is completed, and report results in a future ITR.

C.3-45 As a result of IDVP pipe support review, three EOI's were issued:

(1) EOI 1122 (design analysis for one pipe support does not include frequencies required by DCP criteria);

(2) EOI 1129 (errors in calculating weld stress);

(3) EOI 1131 (design analyses for two supports do not evaluate logs and welds as required in the DCP corrective action program.)

C.3-46 The IDVP will formulate a final conclusion on large-bore-piping supports when it has evaluated all analyses.

C.3-46 Comparison of support and nozzle loads calculated by PGandE and RLCA showed very large and significant differences. No comparisons with allowable loads or stresses were presented. This concern will be addressed during an analysis of large-bore-

piping supports made by the IDVP verification of the DCP Corrective Action Program.
Follow-up efforts by Staff will concentrate on verifying that PGandE has correctly addressed stated concerns.

C.3-47 Final results of piping support verification will be reported in future ITR's.

C.3-48 The IDVP will verify and report whether all supports of the reviewed piping satisfy the required allowable loads or stresses.
The IDVP should evaluate and justify the buckling criteria specified for linear supports.
Staff considers this an open issue and will report its resolution in a SER supplement.

C.3-48 The IDVP will perform an evaluation and verification of a sample of piping where this condition is significant, and report this as part of its verification of the DCP Corrective Action Program.

C.3-48 The IDVP will repeat calculations for these piping systems with the present support configuration and current loading, and verify that the stresses and supports satisfy all corresponding design criteria.

C.3-48 IDVP verification of the DCP Corrective Action Program for large-bore piping and

supports is as yet incomplete, and will be reported in future ITR's.

Staff review and evaluation of these ITR's will be reported in a supplement to the SER.

3.3.2 Small-Bore Piping and Supports

C.3-50 PGandE will review and qualify as appropriate all equipment recently seismically qualified.

C.3-52 The sample review to check lug local stress has not been completed.

C.3-53 As a result of the initial review of small-bore piping, several generic concerns were identified regarding span rules. In addition, the use of engineering judgment, verification of maximum vertical and horizontal spans, and the field marking of hangers were items also noted.

The IDVP will verify that these concerns have been addressed and implemented through its verification of the DCP Corrective Action Program.

C.3-55 IDVP review of small-bore piping is not yet complete.

C.3-57 IDVP review of small-bore piping supports is not yet complete, and will be reported in future ITR's when all analyses have been evaluated by the IDVP.

C.3-57 DCP review of small-bore piping supports is unclear as to the extent of the review, and it appears the evaluation has as yet not been completed.

C.3-58 Staff will review the small-bore piping and support reports and will present results in a future supplement to the SER.

## 3.4 Equipment and Supports

### 3.4.1 Mechanical Equipment and Supports

C.3-59 DCP anticipates that mechanical equipment or support may be modified or that loads will be reduced by further analysis. Field verification of some component configurations has as yet not been completed.

C.3-59 Because not all final spectra have been issued, some calculations may have to be revised to ensure that affected equipment is qualified.

C.3.67 IDVP review for tanks is not yet complete.

C.3-68 IDVP review for valves is not yet complete.

C.3-68 IDVP review for pumps is not yet complete. IDVP has determined that the flanges on pumps require reevaluation.

This aspect of DCP work is considered an unresolved concern at this time.

C.3-69 IDVP review for heat exchangers is not yet complete. IDVP will formulate a final conclusion as to all mechanical equipment and its conformance when IDVP verification is complete, and will report results in ITR 67. A review of evaluation of this ITR will be reported in a future SER supplement.

C.3-70 Staff concludes from the PGandE Phase I Final Report that not all mechanical equipment as yet is seismically qualified to perform its intended safety function.

C.3-70 IDVP is currently reviewing DCP efforts to ensure IDVP concerns are being addressed in the DCP Corrective Action Program. IDVP verification effort is as yet incomplete.

C.3-70 IDVP will report on the verification effort on mechanical equipment in ITR 67.

C.3-70 The Staff will review ITR 67 in a future supplement to the SER.

3.4.2 Hearing, Ventilation and Air Conditioning Equipment

C.3-71 IDVP reivew is not complete as of June 30, 1983.

C.3-72 IDVP intends to formulate a final conclusion when its review of DCP verification of HVAC equipment is complete.

C.3-73 Staff will complete its evaluation when the IDVP review is completed.

C.3-74 As a result of the IDVP review of electrical raceways five concerns relating to design criteria/methodology were identified. Four additional concerns were raised as a result of physical measurements taken at the plant. Seven EOI's were opened as a result of this review.

EOI 983, Error Class A (electrical raceways) was combined with three other EOI's. EOI 983 is still open.

C.3-75 ITR 7 recommends that the DCP should:

(1) modify design criteria and methodology used to seismically qualify electrical raceway supports;

(2) define Hosgri response spectra inputs for all electrical raceway supports;

(3) ensure that raceway supports conform to design installation criteria.

C.3-75 IDVP verification of electrical raceways is not complete as yet, and results will be presented in a future ITR.

Staff will evaluate the IDVP review on completion.

C.3-77 IDVP review of instrument tubing supports is not yet complete, and results will be reported in a future ITR.

C.3-80 Initial IDVP review discovered inadequacies. EOI's were issued and combined to reduce the amount of items outstanding.

C.3-80 Staff will review the IDVP review on issue of the ITR, and formulate its conclusions at that time.

C.3-80 Conclusion: IDVP verification of the DCP review on electrical raceways and instrument tubing and supports has not been completed.

## 3.5 Other Seismic Design Verification Topics

### 3.5.1 Soils and Foundations

C.3-83 Staff finds the scope of RLCA verification lacking in definition of the stratigraphy and numerical values of the properties of backfill material. RLCA will revise ITR 13 (lithology and backfill material).

C.3-85 RLCA's report ITR 39 (strength and bearing of rock, and the lateral pressures on intake strucutre walls) does not present justification for its simplified assumptions or for conservatism in the analyses. RLCA will revise ITR 39 to address staff concerns. Staff will review the revised ITR and give

its findings in a future report.

C.3-86 RLCA's report ITR 40 (sliding resistance of the intake structure) does not evaluate total resistance to sliding or total lateral force, and the resulting safety factor against sliding. RLCA will revise ITR 40 to address staff concerns.

Staff will review the revised ITR and give its findings in a future report.

C.3-86 Conclusion: RLCA is revising ITR's 13, 39 and 40 for the intake structure. Staff will evaluate the revised ITR's when they become available, and make a future report.

C.3-87 Staff concurred with RLCA recommendation that target response spectra specified for all items shake table tested be additionally verified.

C.3-88 Results of IDVP verification of DCP shake table testing will be reported in ITR 67. Staff evaluation will be made when ITR 67 is issued.

C.3-89 IDVP review of shake table testing is not complete.

Staff conclusion will be made when IDVP verification of DCP work is complete.

3.5.3 Seismic Qualification -- Main Control Board

C.3-91 Staff acceptance of the MCB is contingent upon written confirmation of completion of all modifications to the MCB including devices with the complete qualification documentation being available for staff audit.

3.6.5 Analysis of Containment Spray Discharge Line and Accumulator Loop

C.3-95 The BNL review noted the following deficiencies and omissions in the PGandE-Westinghouse models:

Containment Spray Discharge Line

(1) Span length differencs were noted (BNL spans were larger).

(2) The X coordinates of two nodes were undefined.

(3) Support not shown.

Accumulator Loop

(1) Bend definition is inconsistent with pressurizer and accumulator center line locations shown on the same drawing.

(2) Vertical dimensions of the pipe run are inconsistent.

(3) Several modeling differences were noted.

(4) Insulation specifications for some lines are undefined.

(5) Elbow designations are not shown.

C.3-96 Natural frequencies predicted using the BNL models differed from PGandE/Westinghouse estimates.

C.3-99 In view of the BNL results, PGandE will perform the following further investigations:

(1) Refined mesh computer runs will be made using YY section properties.

(2) Runs with and without deconvolution will be made.

(3) A partially filled tank case will be examined.

(4) YY section properties in conjunction with the static analysis will be carefully examined.

4. Nonseismic Design Verification Effort

4.3.2 Selection of System Design Pressure and Temperature and Differential Pressure Across Power-Operated Valves

C.4.25 PGandE reanalysis of MSS and CCWS indicated that pressure and temperature conditions were higher than originally specified for the systems. As a result of this review, PGandE

will modify steam traps and rereview all MSS safety-related valves. PGandE will reanalyze and modify several other components as well. Four CCWS valve actuators are under PGandE review.

C.4-26 Staff will confirm that any modifications required in safety-related systems to satisfy pressure/temperature rating and valve operability are implemented.

C.4-27 PGandE continuing reanalysis of pressure/temperature transients will include effects of ventilation system operation. PGandE will make any modification necessary as a result of this reanalysis, and will provide revised documentation.

C.4-27 Staff will review PGandE updated submittals resulting from the reanalyses.

4.3.5 Jet Impingement Effects of Postulated Pipe Ruptures Inside Containment

C.4-29 As a result of IDVP verification, four concerns were identified and reported in EOI 8065. DCP will perform a safety evaluation to resolve these items.

C.4-29 Review of jet impingement effects by DCP and SWEC has not yet been completed. The IDVP Final Report does not contain sufficient

information to permit a final staff assessment.

IDVP will report its findings in a future ITR. Jet impingement effects will be considered an open issue whose resolution will be reported in an SER supplement.

C.4-29 Staff finds that the DCP has not yet demonstrated, nor has the IDVP verified, that possible jet impingement loads were considered in safety-related piping and equipment inside containment. This is considered an open safety issue whose resolution will be reported in a SER supplement.

Staff considers DCP and IDVP efforts so far acceptable only for meeting fuel load authorization requirements.

4.3.6 Rupture Restraints

C.4-31 IDVP will formulate final conclusions as to qualifications of rupture restraints when IDVP review of calculations is complete.

C.4-31 DCP review and IDVP verification of rupture restraints outside and inside containment has not as yet been completed and no submittal from DCP has been received.

Insufficient information has been provided in the IDVP Final Report to permit a definite assessment by staff of the adequacy of DCP corrective action or quality of IDVP review. No information has as yet been submitted on IDVP verification of DCP review on restraints inside containment.

C.4-31 DCP has not yet satisfactorily reviewed the restraints. IDVP has not design and installation of the restraints against postulated piping ruptures.
Staff considers this an open safety issue whose resolution will be reported in a future SER supplement. DCP and IDVP efforts so far are acceptable only for meeting fuel load authorization requirements.

## 5. Summary and Conclusions

### 5. Summary

C.5-1 Four EOI files are unresolved at this time, and their resolution will be addressed in a future supplement.

C.5.2 When an EOI is found to be of sufficient significance, it is classified as a finding. Of 25 significant EOI's classified as findings, some address only one item and others encompass a number of concerns related

to a given structure.

Eighteen of these findings were incomplete as of June 30, 1983.

C.5-2 As stated by the IDVP in its Final Report and in the July 1983 semi-monthly report, many activities are still in progress. In particular, those activities resulting from the Corrective Action Program for structures, system and components are among those still incomplete.

IDVP will provide its verification effort to Staff in future ITR's and/or Final Report revisions.

C.5-2 As of June 30, 1983, Staff has identified a number of concerns that require future action by the IDVP and/or PGandE. These areas of concern are:

(1) Appropriateness of modelling and assumptions

(2) Applicable requirements, criteria and codes

(3) Proper loads to be applied.

These concerns must be resolved in accordance with a schedule consistent with Commission order provisions.

5.2 Conclusions

C.5-2 Staff recommends authority to load fuel and conduct low-power testing be reinstated subject to Staff verification of satisfactory completion of all efforts presently under way which are required for license activities authorized.

C.5-3 The IDVP Final Report will be updated as additional efforts are completed.

PGandE will supplement Phase I and II Final Reports on completion of their activities.

Table C.5.1 List of IDVP findings

| EOI file | Subject | Error class | Completion status |
|---|---|---|---|
| 932 | Containment spray system piping support | A | Yes |
| 938 | Valve orientation in chemical volume and control system | A | No |
| 949 | Main annunciator cabinet - stiffness assumption | A/B | Yes |
| 963 | Containment spray system piping support | B | Yes |
| 983 | Electrical raceway supports - use of proper spectra | A | No |
| 1003 | HVAC duct supports - use of Hosgri loadings | A/B | No |
| 1014 | Containment seismic reevaluation (annulus steel structure, interior concrete, exterior concrete) | A/B | No |
| 1022 | Intake structure reevaluation | A/B | No |
| 1026 | Turbine building reevaluation | A/B | No |
| 1069 | Support for valves in AFWS | A | No |
| 1092 | Fuel handling building reevaluation | A | No |
| 1097 | Auxiliary building reevaluation | A/B | No |
| 1098 | Piping reevaluation (large- and small-bore piping and supports) | A/B | No |
| 1106 | Nozzle load and valve acceleration | A/B | No |
| 1107 | Piping system sample 110 (support, vent valve, and weld connection) | A | No |
| 1124 | Auxiliary building control room floor slab - discrepancy between model and as built | B | No |
| 7002 | Documentation of analyses of jet impingement inside containment | A/B | No |
| 8001 | Calculation of environmental conditions outside containment | A/B | No |
| 8009 | Design pressure of AFWS | A | Yes |
| 8010 | Overpressure protection to AFWS pump bearing coolers | A | Yes |
| 8012 | Electrical power supply system redundancy for CRVPS | A | No |