

FEB 23 1983

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MEMORANDUM FOR: Chairman Palladino  
Commissioner Gilinsky  
Commissioner Ahearne  
Commissioner Roberts  
Commissioner Asselstine

FROM: William J. Dircks  
Executive Director for Operations

SUBJECT: STATUS OF DIABLO CANYON DESIGN VERIFICATION PROGRAM

Per your request, attached is a status summary of the evaluation efforts in progress for Diablo Canyon by PG&E, the IDVP and the staff.

The critical element in completing the activities required for a Commission decision regarding fuel load authorization (Step 1 of the 3-step approved licensing process) is the design verification of the containment annulus steel structure and the necessary modifications to the structure. PG&E is continuing the analysis and discussion with the IDVP is required regarding the adequacy of proposed modifications. The results of the recently completed horizontal analysis of the annulus structure by BNL were presented to PG&E and the IDVP in a meeting on February 15, 1983. The final resolution will require the interaction of PG&E, the IDVP and the staff (in conjunction with BNL).

(Signed) William J. Dircks

William J. Dircks  
Executive Director for Operations

Enclosure:  
As stated

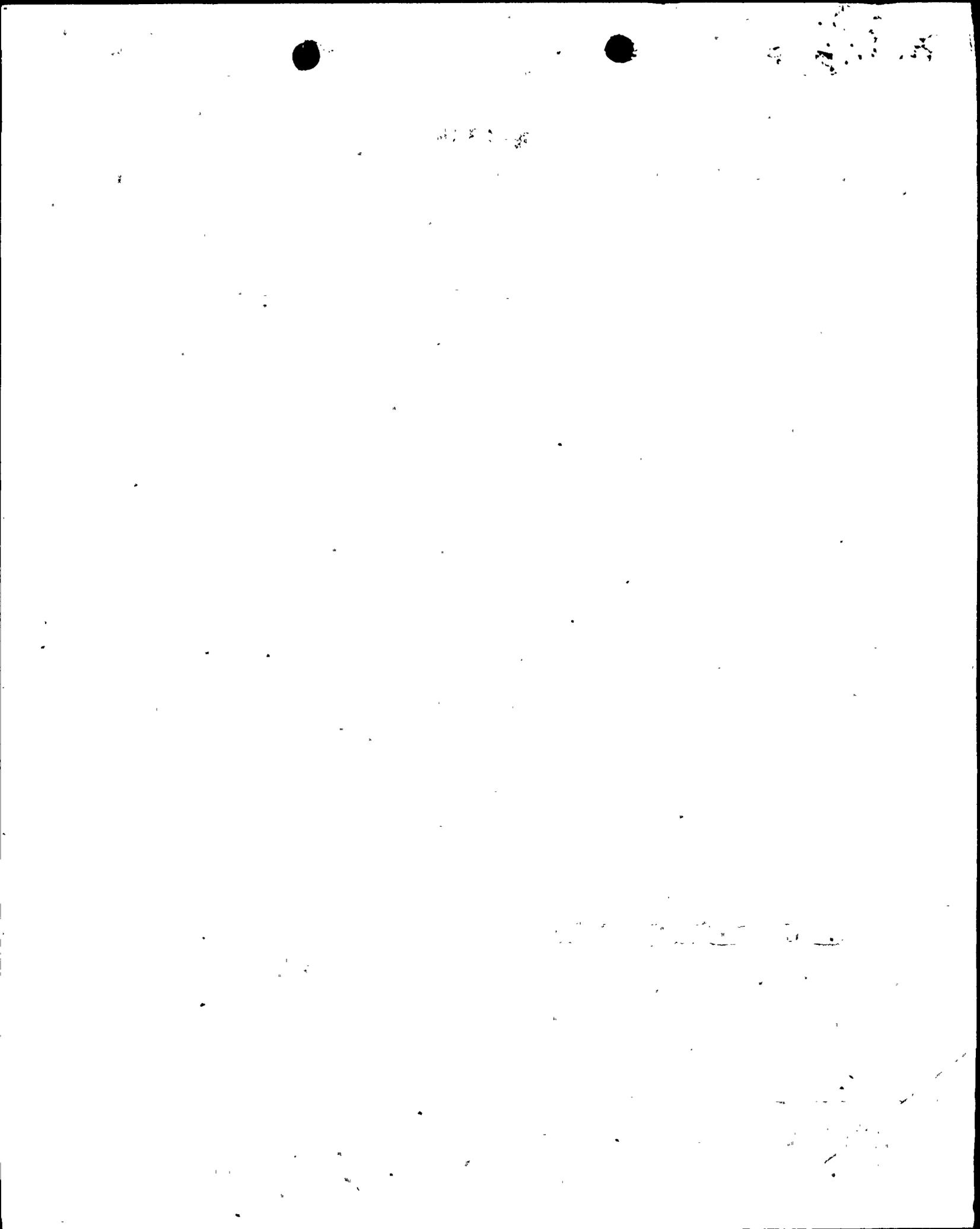
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Contact: H. Schierling, DL/NRR

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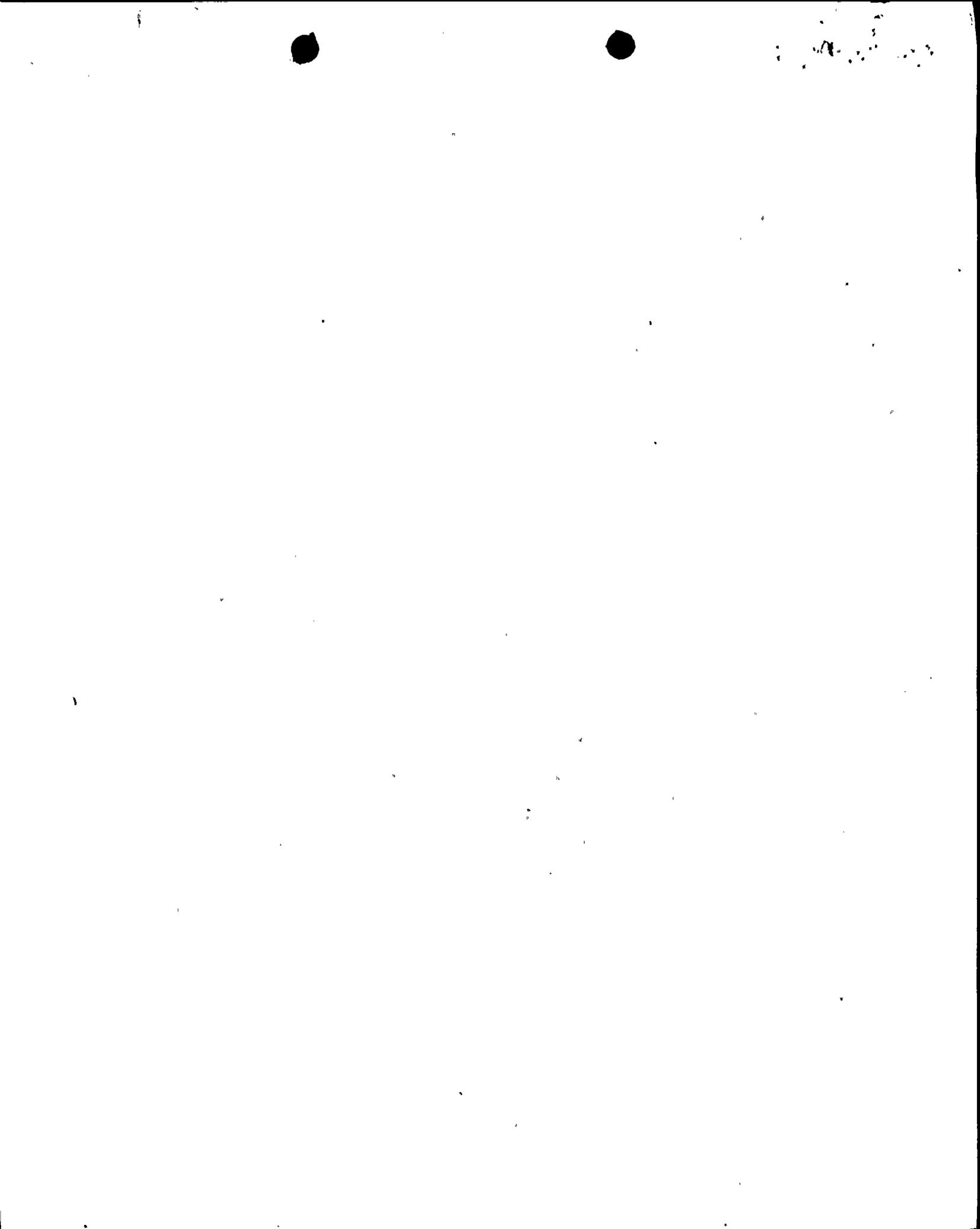
Diablo Canyon Design Verification Program  
Status Report - February 18, 1983

I. Overview

Diablo Canyon review has been proceeding along the approach discussed with the Commission in December. Our recent letter, dated February 17, 1983, to Rep. Udall addresses several pertinent features of that approach (see Enclosure 1).

The schedule has also been proceeding generally along that set forth in the PG&E December 2 submittal (copy attached to Enclosure 1) although PG&E/IDVP efforts appear slightly behind schedule.

PG&E and IDVP evaluation efforts are approximately 2/3 complete for Phase I and 1/3 complete for Phase II activities. The staff review is proceeding and its efforts, including BNL review, are following and supporting the PGE/IDVP schedules.

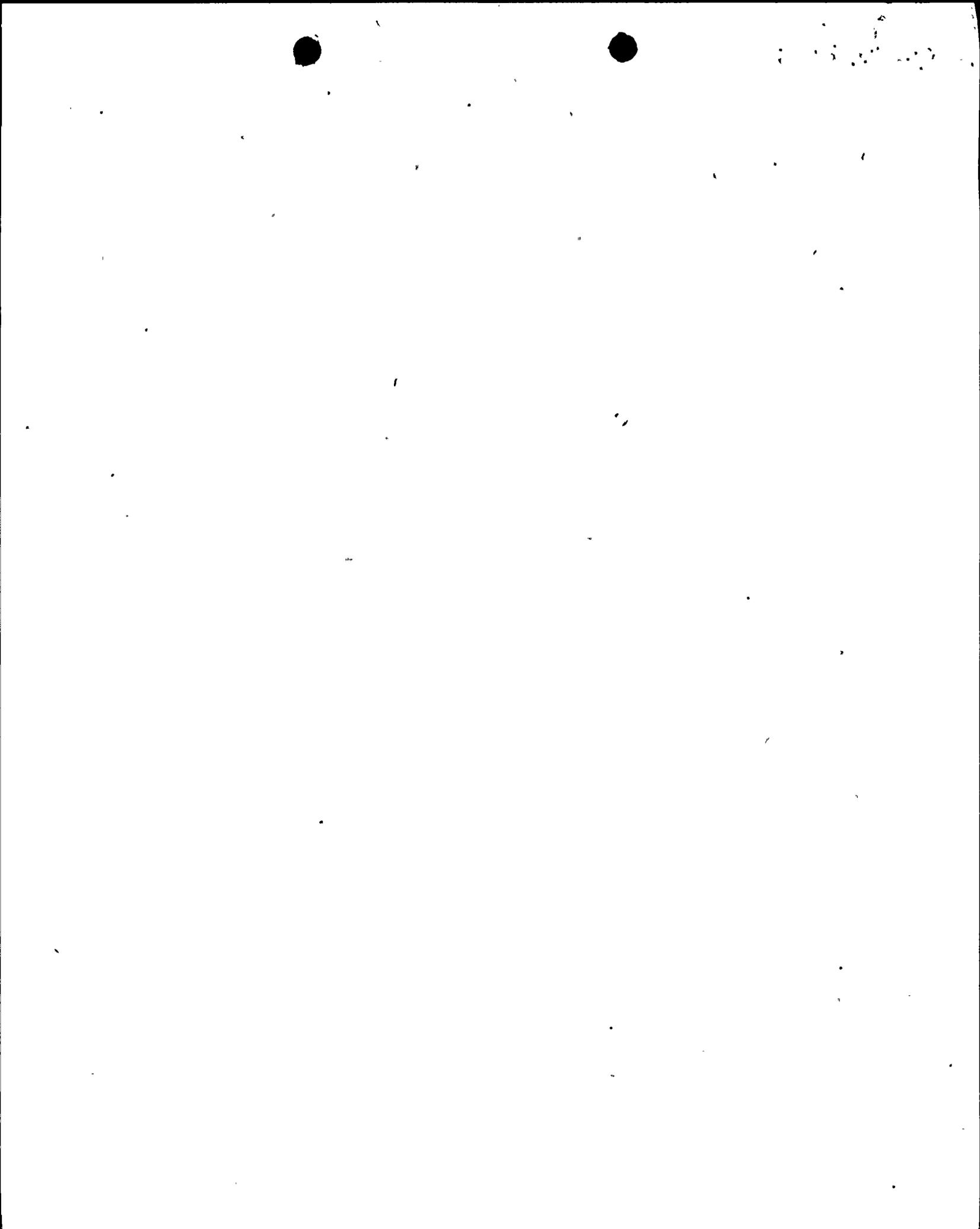


## II. PG&E Efforts

PG&E Semi-Monthly Report 31 (February 11, 1983) provides summary information on the IDVP and on the PG&E Internal Technical Program (ITP). The ITP has identified to date 36 Open Items (OI), two of which occurred in the last reporting period (OI 35 - Deficiencies in STRUDL II Computer Program; OI 36 - Discrepancies in Heat Loads for HVAC Design). These open items are comparable to the EOIs of the IDVP. Open Item 34, identified by PG&E in December 1982, identified the potential that the component cooling water system under certain assumed failure modes, may not meet the licensing criteria. (This issue is also discussed below under staff activities).

The ITP is continuing its confirmatory analysis of the annulus steel structure. The status of the effort was discussed with the IDVP at a meeting on February 4, 1983. PG&E is evaluating the results of the analysis in light of the IDVP comments made during the meeting with respect to potential modifications to the steel structure. Another meeting on the subject is scheduled for late February. These structural modifications would result in floor response spectra (accelerations as function of frequency) which are within the FSAR envelope design spectra. PG&E will address their annulus steel structure analysis results in the next amendment to the Phase I Final Report (Eight additions/amendments to this report have been made to date).

PG&E estimated at the end of January that the analysis and engineering design effort for Phase I and Phase II has been about 2/3 completed and the modifications for both Phases are about 1/3 completed.



III. Independent Design Verification Program (IDVP)

The IDVP semi-monthly report for January 1983 (January 28, 1983) provides the following information regarding issues that have been identified as EOIs (error or open item) and for which a file has been opened:

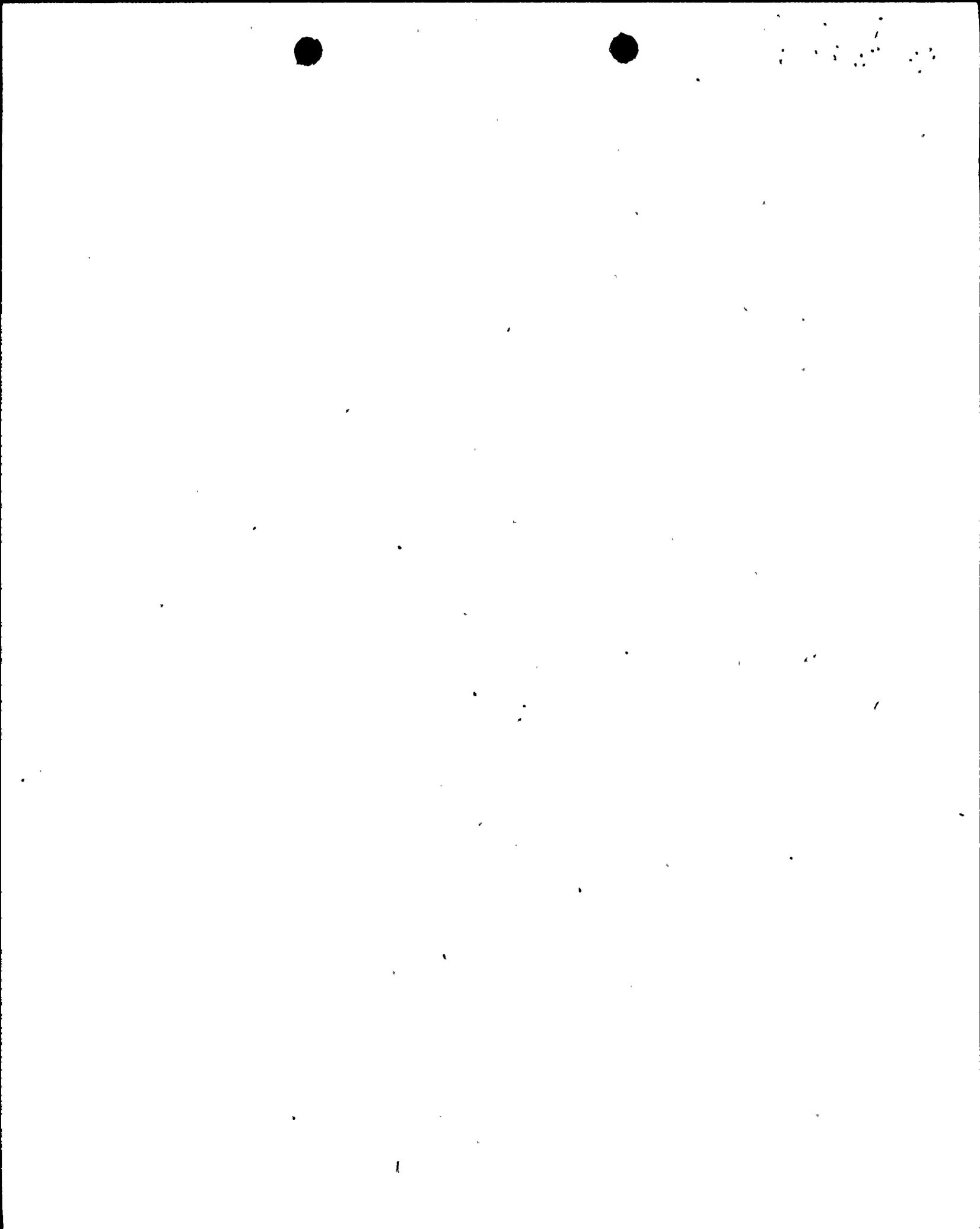
	<u>Phase I</u>	<u>Phase II</u>	<u>Construction QA</u>
Total	194	70	29
Errors	17	22	-
Non-Errors	177	48	-
Resolution			
Resolved by IDVP	164	3	18
Evaluation Continuing	30	67	11

As of February 17, 1983, 32 Interim Technical Reports (ITR) have been issued by the IDVP, of which 17 pertain to Phase I activities and 15 to Phase II activities. A listing of all ITRs issued is provided in Enclosure 2. Many of the Phase II ITRs require a revision as a result of meetings between the IDVP and the PG&E Diablo Canyon Project at which the Project provided further clarification and information on issues identified in these ITRs. These meetings also provided clarification regarding potential Phase II additional verification and additional sampling that had been identified in Draft ITR-224 of December 23, 1983. At this time, the IDVP has preliminarily identified the need for the following additional verification work for Phase II:



1. Evaluation of redundancy of equipment for shared systems between Unit 1 and Unit 2,
2. Evaluating the design temperature and pressure for two additional safety-related systems (component cooling water and main steam system),
3. Analysis of jet impingement effects inside containment,
4. Evaluation of environmental consequences of postulated pipe ruptures outside containment.

The IDVP review of the Brookhaven Report on the vertical seismic analysis of the annulus steel structure, as requested by NRR, is in progress. Additional information provided by BNL on this subject is being reviewed by the IDVP and an ITR on the subject is expected.



IV. NRC Effort

The staff met with PG&E on January 13, 1983 to discuss the overall status of the design verification effort. At that meeting PG&E informed the staff that the schedules outlined in their letter of December 2 remains current and achievable. (NRC fuel load decision required by March 31). A transcript of that meeting, open to the public, was provided to all parties. The staff has been informally notified by PG&E that, while efforts are a few weeks behind schedule, they are attempting to hold the December 2 schedule.

On January 25, 1983 BNL briefed the staff on the status of their studies and on February 15, 1983 the same information was discussed in a meeting which was also attended by the IDVP and PG&E. The additional BNL studies on a buried tank and on two additional piping problems are in progress and are expected to be completed in about one month. The BNL horizontal seismic analysis of the annulus steel structure has been completed. The analysis shows that torsional effects in the horizontal plane exist and some localized motions can significantly contribute to the overall response. The staff is evaluating these findings. The BNL analysis was based on information provided by PG&E up through early January and may not necessarily account for recent modifications to the structure.

As a result of the review by the IDVP of the pressure and temperature environment for safety-related equipment outside containment, as presented in ITR 14, the staff initiated a review of this subject. PG&E was requested and provided the necessary detailed information for a calculation with the staff computer code currently in use.



In a related matter, in early January, allegations were made to the staff regarding the design adequacy and performance of the Diablo Canyon Unit 1 component cooling water (CCW) system and several other related concerns. The allegor has requested to remain anonymous and the staff is attempting to honor that request. The allegations were the subject of Board Notifications. NRR subsequently informed the IDVP of those allegations. The staff met with PG&E on January 28, 1983 to discuss these concerns. The meeting was open to the Public. PG&E provided clarification on the design bases and functional performance of the CCW system. The staff currently is re-evaluating the issue in light of the additional information and our review efforts are targeted for completion by early April. (See Enclosure 3).

