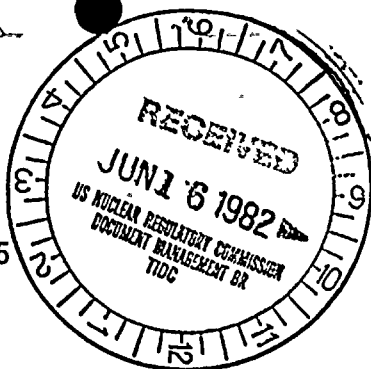


Docket No.: 50-275



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MEMORANDUM FOR: Frank J. Miraglia, Chief,
Licensing Branch No. 3, DL

FROM: Hans Schierling, Project Manager
Design Verification Program,
Licensing Branch No. 3, DL

SUBJECT: DIABLO CANYON INDEPENDENT DESIGN VERIFICATION PROGRAM
INSPECTION OF TELEDYNE ENGINEERING SERVICES, MAY 25
AND 26, 1982

NRR staff participated in an audit conducted by Region V personnel on May 25 and 26, 1982 of the Diablo Canyon Independent Design Verification Program (IDVP) activities of Teledyne Engineering Services (TES) in Waltham, Massachusetts. Representatives from Pacific Gas and Electric Company (PG&E) were present as observers. Attachment 1 is a list of NRC participants, the PG&E observers and the TES personnel contacted, including their consultants. The following is a summary of some observations and items of discussion.

The technical information available at the TES offices in Waltham for the Error and Open Item (EOI) issues is rather limited. (EOIs are reported in TES semi-monthly reports and are tracked by PG&E in semi-monthly reports). Each issue, identified as a "File" by number, has a file package which includes status identification at various stages during the IDVP process through the use of standard formats. The information provided in these forms in many cases is not sufficient to allow an evaluation of the issue or even to understand the issue. Upon completion of the review effort, TES issues an "IDVP Completion Report", which also is a standard form. This does not necessarily indicate that further action on the EOI may be required or not. (Similarly, PG&E in its tracking of EOIs identifies some issues as "Closed" which also does not necessarily mean that further action may be required or not). Based on the files reviewed, the staff recommended that additional information and a better definition of the EOI status be provided in the semi-monthly report. The item discussed below demonstrates the deficiencies.

The staff audited the TES documentation for EOI File 932 and discussed the IDVP review with R. Foti and R. Wray of TES. The issue of File 932 is the restraint for a vertical pipe of the containment spray system in a floor penetration in the auxiliary building. It was identified by R. L. Cloud Associates (RLCA) during Sample Piping Analysis 100. The PG&E drawing and analysis showed a rigid support in both vertical and horizontal directions while RLCA field information showed

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a support for dead weight only, i.e. no horizontal pipe restraint in the penetration and no vertical restraint against pipe uplift. File 932 included the above mentioned standard forms for status identification, beginning with the "Error and Open Item Sheet" issued by RLCA on January 4, 1982 to PG&E and to the NRC in RLCA semi-monthly report 5. The last form was Revision 6, "IDVP Completion Report" which was included in TES semi-monthly report 13. The information in these forms was insufficient to gain a clear understanding of the issue, of the particular analysis that had been preformed by RLCA and TES and for a technical evaluation by the staff. However, additional information contained in File 932 at TES consisted of PG&E and TES calculation and summary sheets. TES stated that more detailed information is contained in the RLCA File 932 in Berkeley, California. The IDVP analysis by RLCA of the as-built restraint showed an overstress in piping; an RLCA analysis with a rigid support assumption resulted in stresses within allowable limits. PG&E was advised of the results and subsequently redesigned the support and made the appropriate modification. R. Foti, the TES reviewer for pipe supports, had evaluated the RLCA analysis in Berkeley and Waltham and concurred with the RLCA analysis. In the case of File 932 TES issued an IDVP Completion Report form (File 932 Rev. 6) stating that File 932 Rev. 5 is a Program Resolution Report which recategorized this item as a Closed Item. (The PG&E status of IDVP items indicated in semi-monthly report 13 that File 932 was "Closed"). The staff noted that EOI File 1062 makes reference to File 932 and appears to be a follow-up of that File. File 1062 was initiated on March 15, 1982 and no further action apparently had been taken so far.

The staff discussed the status and relationship of both files. The staff stated, and TES agreed, that as part of the IDVP TES would verify any field modifications that had been made as a result of the IDVP. However, it was not clear if such verification already had been made by TES as one could assume from the issuance of the completion report and from the "Closed" statement in the PG&E tracking system. Furthermore, it was not clear how File 1062 is related to File 932 or if it is a unique new open item.

The IDVP technical review effort is conducted by (RLCA) in Berkeley, California. W. Cooper stated that the RLCA review is independent and can include additional verification without prior approval by TES; additional sampling, however, must be approved by TES. Detailed files of material reviewed, independent analysis performed and their results are maintained by RLCA in the form of work packages. TES personnel from Waltham have reviewed and audited (check of assumptions, calculations and drawings) the work packages in the RLCA offices. The transmittal of information and documentation between RLCA in California and TES in Massachusetts appears to be more of an problem than initially had been expected.


At present, about ten equivalent fulltime professional TES personnel are assigned to the IDVP, primarily in a program management function. Individuals identified as team leaders in a particular area of expertise are frequently the only team members. More staff is expected to be assigned shortly for additional verification and sampling and for Phase II of the program.

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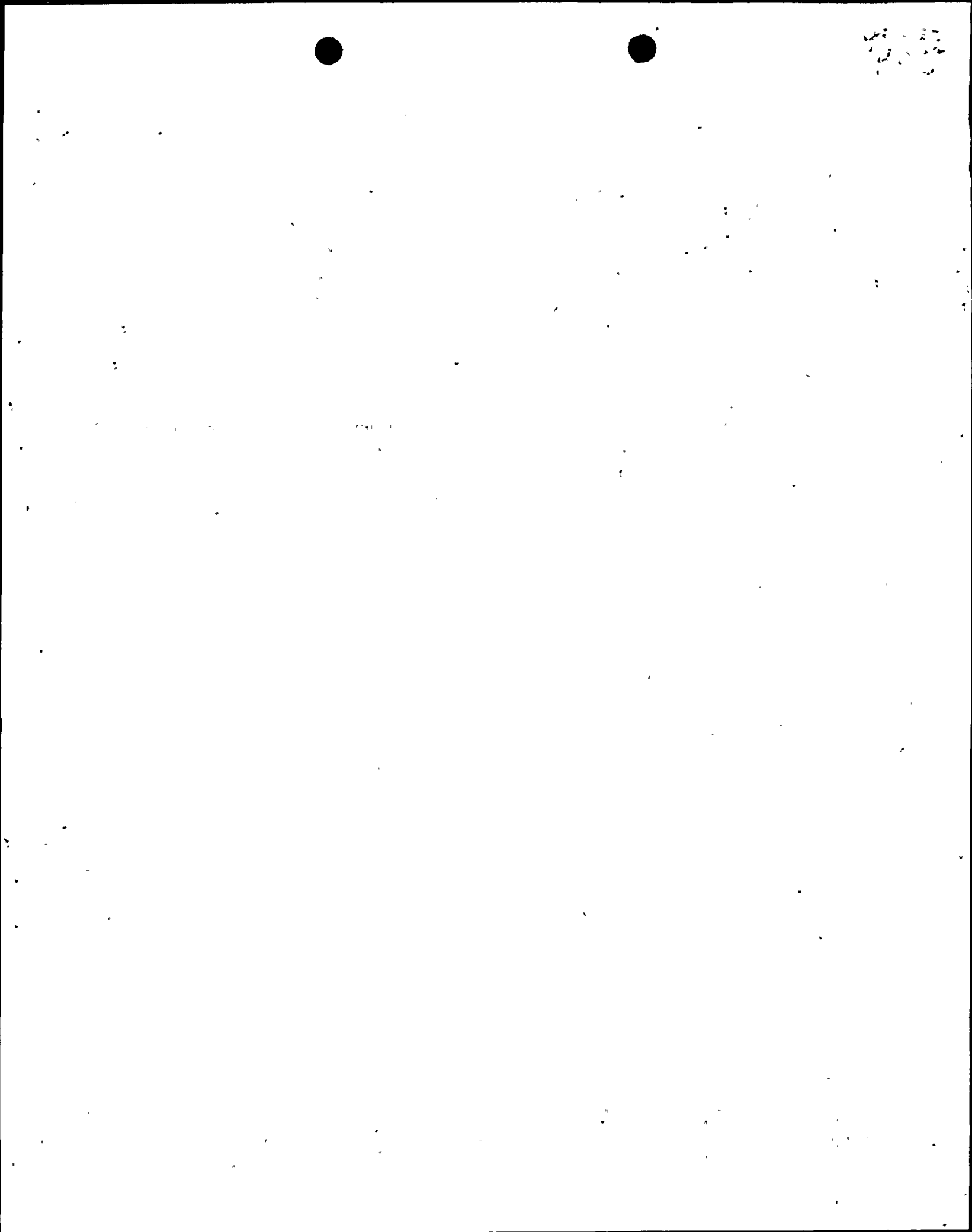
TES made available to the NRC staff a draft report by RLCA on their seismic analysis of the auxiliary building for their familiarization of ongoing work. W. Cooper (TES) did not object to also making the same information available at the same time to the PG&E observers at their request, although the report was on "work in progress" rather than final. Cooper stated that TES is in a unique position in the IDVP effort in that PG&E as the client cannot receive any pre-conclusionary information on the IDVP while the NRC has access to all information at any time. In Cooper's opinion PG&E and the NRC, in effect, are both clients of TES in this project. J. Knight (NRC), after staff caucus, advised TES that the NRC should not be considered as a client. The NRC will investigate and audit at any time any type of work, be it preliminary or a draft, work in progress or a final product. However, only completed work packages should be made available to PG&E in order not to jeopardize the independent status of TES. The PG&E observers acknowledged this position in principle but noted that any staff findings or conclusions which are based on such preliminary information should be appropriately identified as such by the staff in trip reports, inspection reports or other documentation.

W. Cooper stated that in the process of reviewing material and resolving EOIs frequently additional clarification and information is needed from PG&E. The staff stated that such requests and the pertinent PG&E response would be within the intent of the IDVP. The staff emphasized that no discussion or exchange of results or completed work should take place between TES or RLCA and PG&E unless the same information is also provided to the NRC. The staff also stated that any information exchanges should be well documented, in an auditable form, including telephone calls.

This report presents observations made by the author during the audit, it does not address all activities of the NRC staff. For example, P. Morrill of Region V reviewed in detail the TES procedures for the IDVP; J. Eckhardt of Region V interviewed a number of TES employees assigned to the IDVP regarding their independence in the assignment, J. Knight, P. Kuo and H. Polk of NRR looked over the RLCA draft report mentioned earlier and discussed with J. Holley and M. Biggs, civil-structural consultants to TES, the appropriateness of certain assumptions for modeling structures. The details of this audit will be documented in a Region V Inspection Report.


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