

JUL 21 1982

Docket No.: 50-275

MEMORANDUM FOR: Frank J. Miraglia, Chief
Licensing Branch No. 3,
Division of Licensing, NRR

FROM: Kenneth S. Herring
Systematic Evaluation Program Branch
Division of Licensing, NRR

SUBJECT: DIABLO CANYON SEISMIC REVERIFICATION PROGRAM INSPECTIONS -
MAY 26-28, 1982

As part of Region V's ongoing inspection activities regarding the Diablo Canyon seismic design verification program, I conducted an unannounced inspection of the ongoing PG&E efforts on May 26 through 28, 1982. The purposes of this inspection were to: 1) review available results of the PG&E initiated Blume Independent Internal Review (BIR) of past Blume structural analyses related to Diablo Canyon; 2) review the PG&E Document Control Manual (DCM) developed to control response spectra and to assure the use of appropriate up to date response spectra for ongoing design and evaluation of structures, systems and components; and 3) verify that the newly formed Diablo Canyon project organization was functioning in a manner to alleviate weaknesses in the previous organization relative to seismic analysis and design in the civil/structural areas. Observations and conclusions are discussed below.

Blume Independent Internal Review (BIR)

The BIR was conducted by Blume at the direction of PG&E. The purpose of the BIR was to have a group of internal Blume personnel who had not worked on Diablo Canyon in the past conduct a review of all Hosgri structural analyses previously performed by Blume to determine their adequacy to predict the behavior of the as-built Diablo Canyon safety-related structures. In this effort, Blume engineers reviewed the previous Hosgri structural analyses performed by Blume and generated comments regarding their adequacy. These comments were reviewed by a Blume supervisor and passed to the BIR Advisory Committee, chaired by Dr. Blume, for review. When all parties in this process were satisfied, the comments and evaluations were forwarded to PG&E. Enclosure 1 is the procedure by which these comments are handled by PG&E to provide for their resolution. PG&E is responsible for final resolution of items requiring further evaluation, unless such items are a subject of the Independent Design Verification Program (IDVP) managed by Teledyne.

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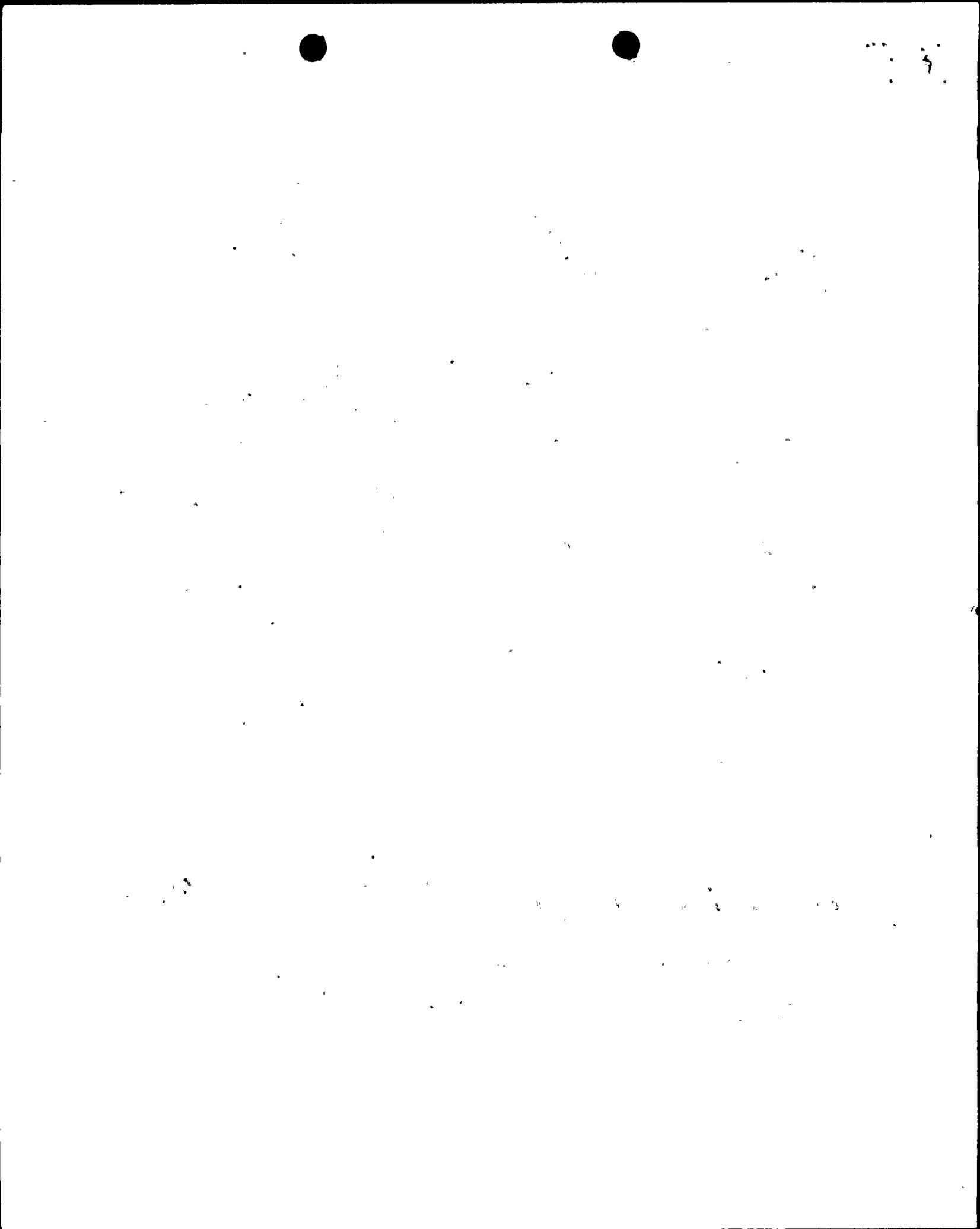
At the time of the inspection, the above program had not been completed. The BIR report was still under preparation, and additional evaluations with regard to the BIR were still being conducted. PG&E indicated that a total of 150 comments had resulted from the BIR. PG&E was able to provide 147 of the comment packages in various stages of resolution for my review. The three additional BIR comments were still under preparation.

Given the preliminary and incomplete nature of these comments and associated resolutions, I conducted a cursory inspection of the 147 comments to gain an insight into the nature and depth of the BIR and associated PG&E program for comment resolution. The comments ranged in content from relatively minor discrepancies to those which required substantial additional effort to determine their significance. Based upon my review and discussions with PG&E, it appeared that these comments were about equally distributed in three major significance categories, namely, 1) those insignificant by inspection, 2) those found to be insignificant or expected to be found insignificant after additional analysis and/or evaluation, and 3) those which were significant and required additional analysis and evaluations to determine their impacts.

From my cursory inspection of the 147 BIR comments, it appears that Blume generally performed a thorough review of its previous Diablo Canyon Hosgri structural analyses. PG&E has implemented an organized program for BIR comment resolution which provides a necessary formal process for PG&E to supply Blume additional information and comments to allow for accuracy in the BIR determinations. The adequacy of this entire effort can only be ascertained after review of the final BIR report, and PG&E's and/or Teledyne's final evaluation of the individual findings. PG&E indicated that they do not plan to submit the BIR final report to the NRC. Details will be submitted for only those items which become part of the Verification Program via entry into the PG&E tracking system. Therefore, if not submitted, an NRC review of this report and associated PG&E comment dispositions should be conducted at the PG&E offices.

Only two potential concerns were noted in my review of the 147 comments and any associated resolutions, and these were discussed with PG&E. The first concern was that information associated with BIR comments AB 018 and TB 006 indicated that figures in Blume reports were inaccurately labelled. The BIR comments were dismissed essentially because the inaccuracies did not materially affect any analyses. I cautioned that future ramifications of such inaccuracies must be carefully considered. The second concern was that the resolutions associated with BIR comments CE 022 and IS 007 did not document the resolution of all the reviewers comments. I indicated that they should ensure that resolution of all reviewer comments are clearly documented in all final packages.

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Response Spectra Document Control Manual (DCM)

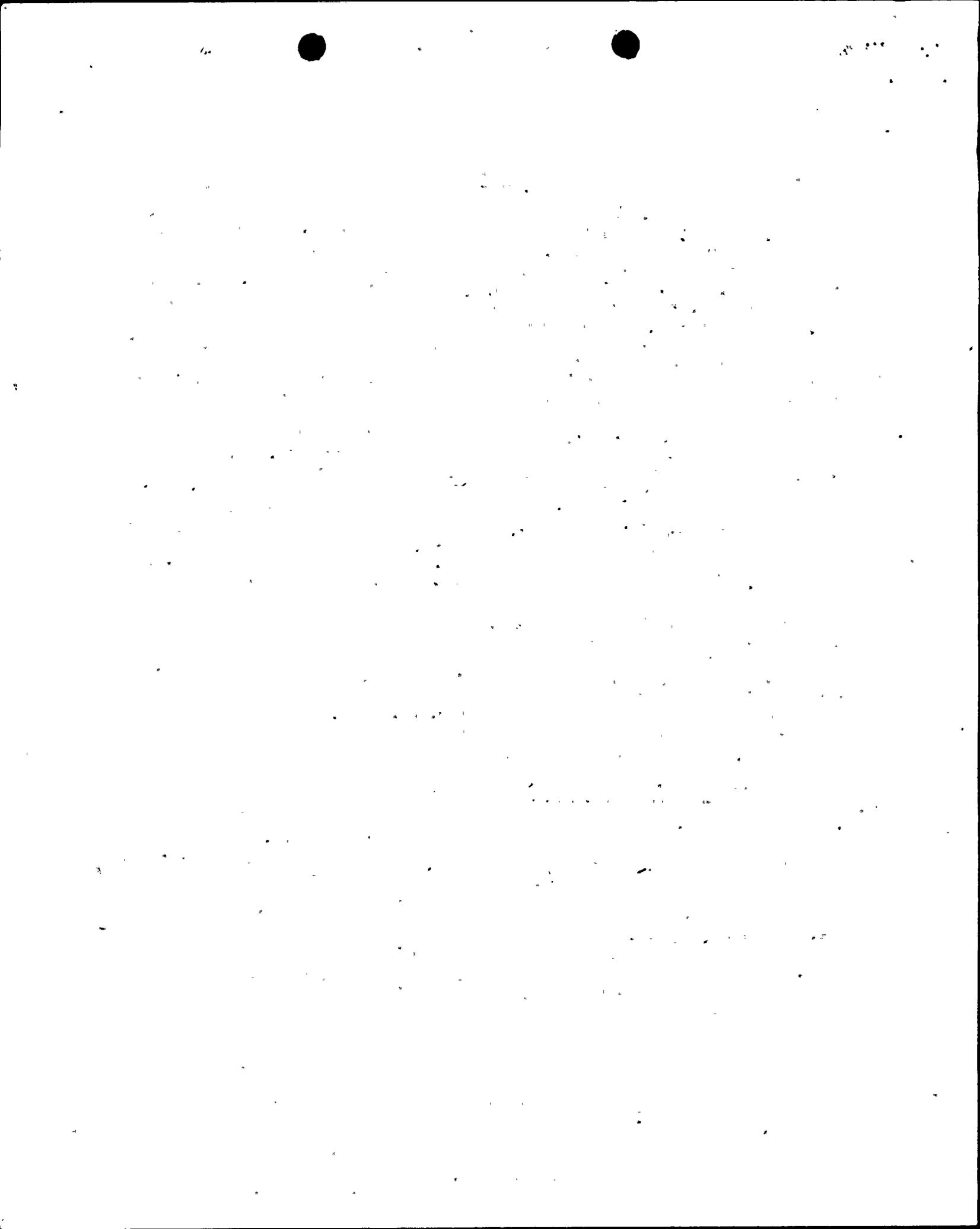
I reviewed PG&E DCM No. 17, Revision 0, dated 04/19/82. This contained all the Hosgri response spectra to be used for design and evaluation of safety-related structures, systems and components. As a controlled document, revisions to spectra are circulated to the appropriate PG&E supervisory personnel responsible for the analysis of the various structures, systems and components, and requires their signature to indicate that they have noted the revisions. In addition to containing the spectra, this DCM summarizes the way in which they are to be used. If spectra are not available at the point of attachment of a particular structure, system or component being designed or evaluated, the DCM requires that the Civil Engineering group specify the spectra, considering intermediate member or structure flexibility, as appropriate.

This DCM should avoid future problems with keeping track of the up to date response spectra and alleviate previous problems in this area. However, I indicated that neither this DCM nor the associated Engineering Manual Procedure No. 3.2 clearly indicated a requirement that the appropriate supervisory personnel insure that the impact of spectra changes is assessed for existing safety-related structures, systems and components. PG&E indicated that functionally this was performed by the appropriate supervisors in the fashion they felt was required. Given 1) the large number of response spectra, 2) the large number of items which would be potentially impacted by changes in spectra, and 3) the potential for changes in these spectra as a result of the current reverification effort, I indicated that it would be prudent to have a clear requirement in the procedures to assess the effects of spectra changes. In addition, I indicated that it may be prudent to have a formal procedure for each supervisor to follow. PG&E indicated that they felt that the former concern would most appropriately be addressed by a revision to Engineering Manual Procedure No. 3.2. Also, they indicated that they would carefully consider the need for implementation of my latter comment in light of already established procedures and practices.

Impacts of the New Diablo Canyon Project Organization

As indicated in the previous discussions, the newly formed project organization of PG&E and Bechtel personnel has taken positive steps to correct deficiencies in previous practices, especially in the area of controlling discipline interfaces. In addition, PG&E indicated that the design and drafting personnel which are responsible for much of the civil/structural related design and evaluation are now reporting directly to the Assistant Project Engineer (APE) for Seismic Analysis and his associated supervisors. This was done to eliminate a potential for communication errors resulting from these personnel being in a separate internal organization, as was the case previously. PG&E also indicated that procedures were still being established and revised as appropriate to provide for design control.

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F. J. Miraglia

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Informal discussions regarding the above were conducted among the individuals listed in Enclosure 2. After discussions with Region V, a formal exit interview was conducted among the individuals listed in Enclosure 3.

Original Signed By:

Kenneth S. Herring
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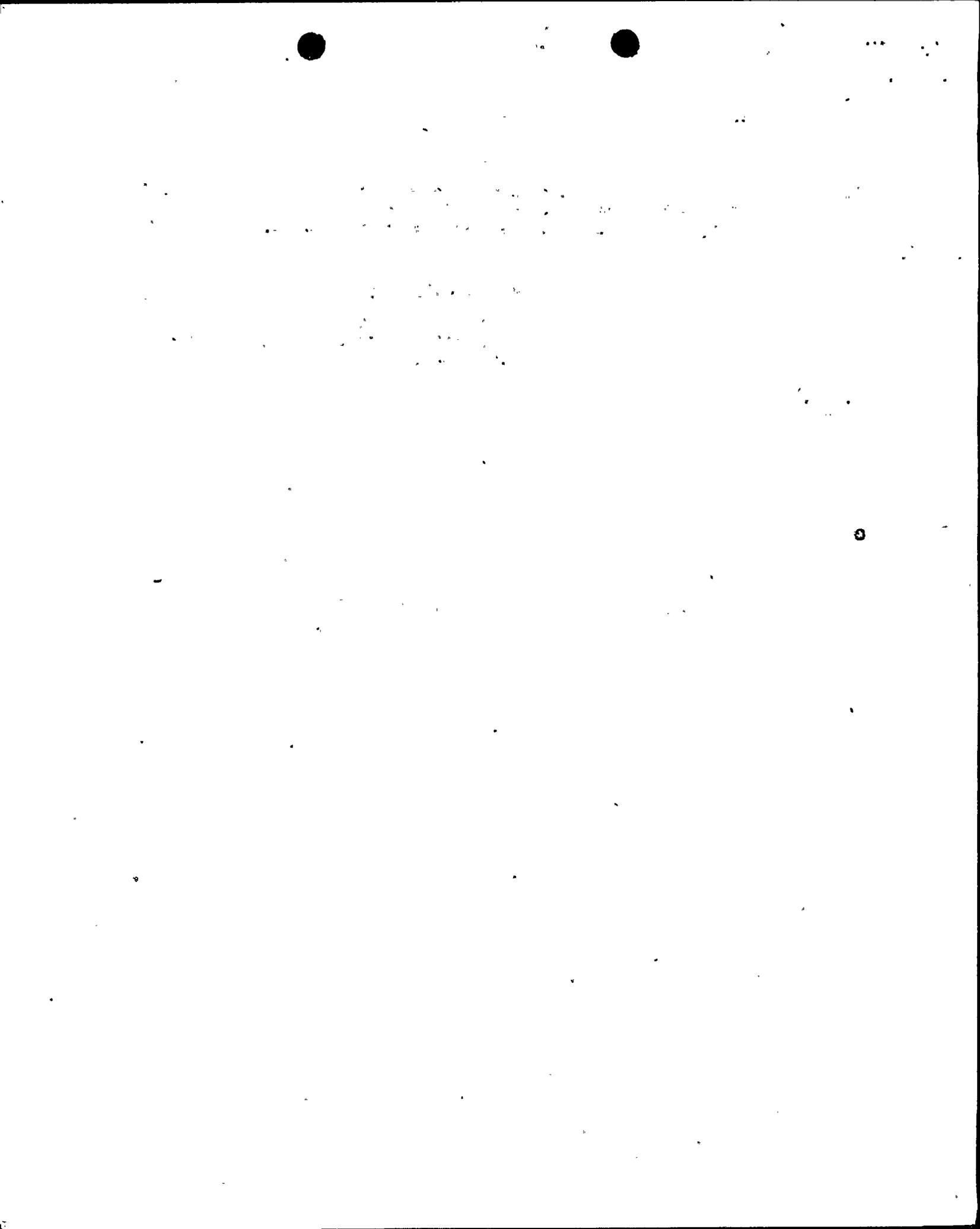
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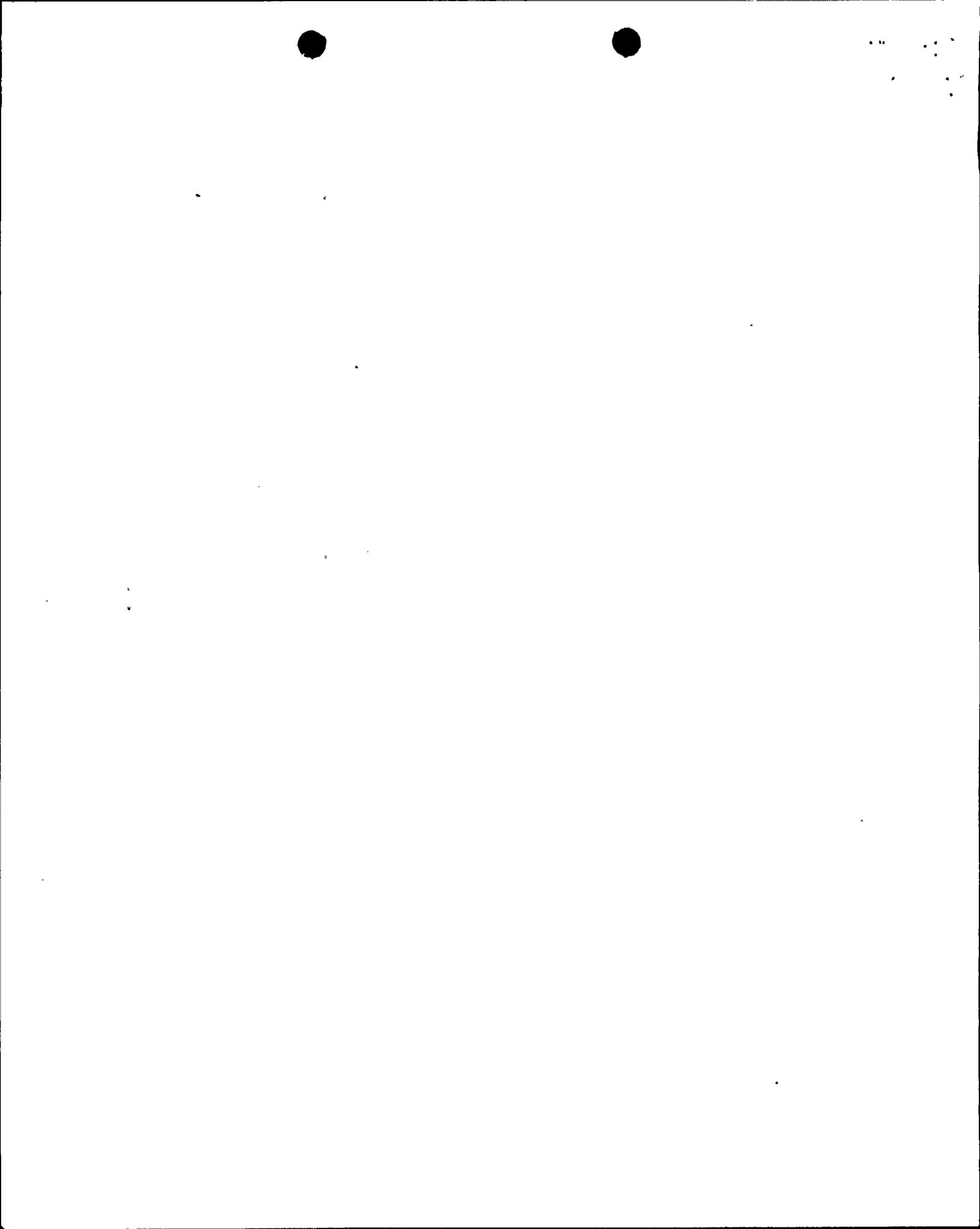
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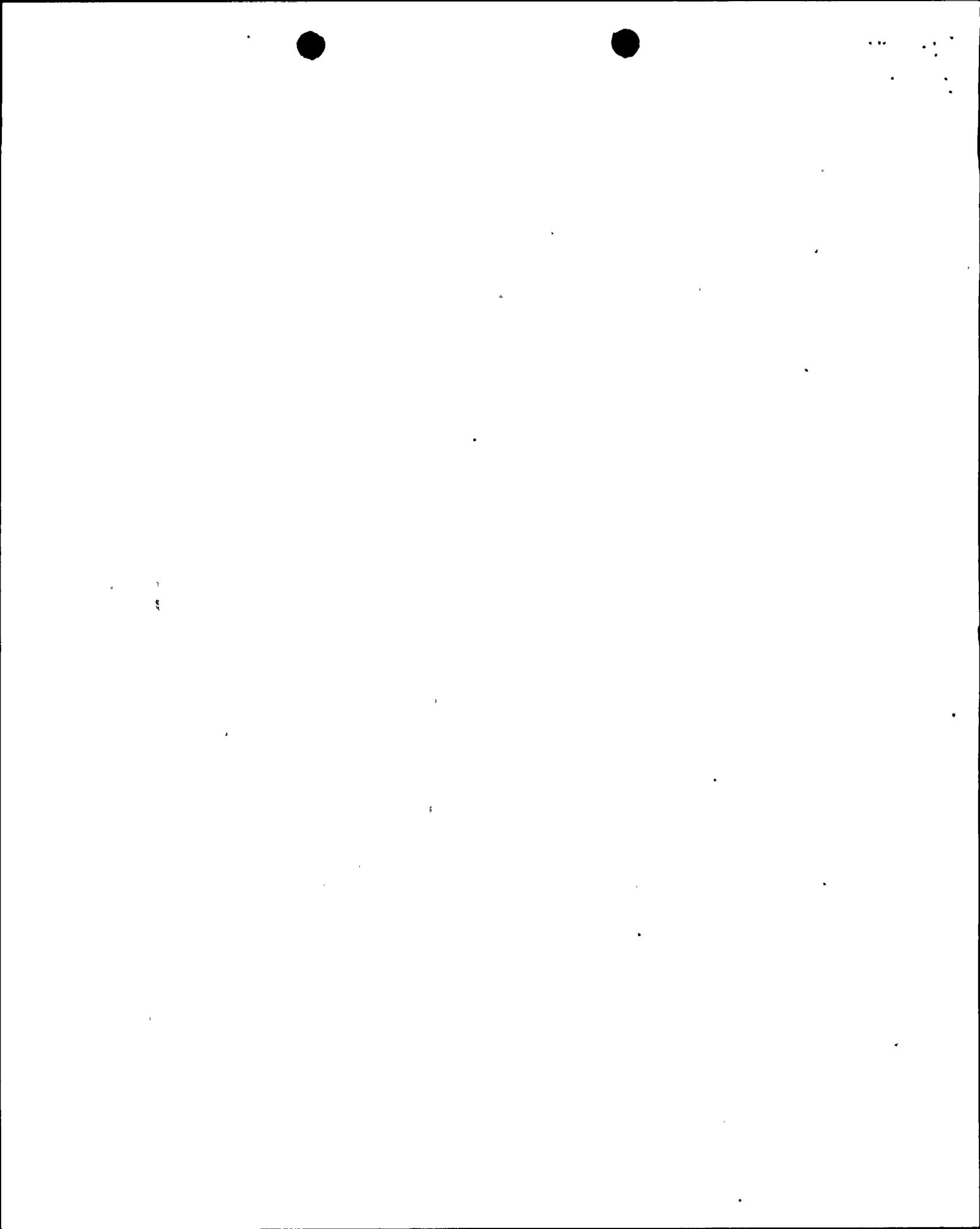
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