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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

January 27, 1982

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

FROM: James A. Fitzgerald *JF*
Assistant General Counsel
TR
Trip Rothschild, Attorney

SUBJECT: DIABLO CANYON -- NEWMARK INQUIRY

Summary

At the Commission's request, we conducted an inquiry into whether Dr. Nathan Newmark had been employed by PG&E on the Diablo Canyon facility. After staff contract files and the Diablo Canyon docket were reviewed, we interviewed Commissioner Gilinsky, Edward C. Abbott, Jack W. Roe, Robert L. Cloud, Pao C. Chen, William J. Hall, and Delbert E. McCulley. On the basis of the interviews and review of pertinent documents, we found no indication that Dr. Newmark was employed by PG&E on the Diablo Canyon project. The following report summarizes the highlights of the interviews and of our document review. Each of the individuals interviewed signed a statement summarizing their interview. These statements are attached. We have also appended a recreation of the chart in Dr. Chen's office.

Background

On November 17, 1981 Commissioner Gilinsky and his Technical Assistant, Edward C. Abbott, went to the offices of Robert L. Cloud and Associates in Berkeley, California to discuss the Diablo Canyon seismic reverification being performed by Dr. Cloud and his associates. After meeting with Dr. Cloud for approximately two hours, Dr. Cloud suggested that Commissioner Gilinsky and Mr. Abbott meet his staff. Among the individuals to whom they were introduced was Dr. Pao Chen. In Dr. Chen's office, Commissioner Gilinsky and Mr. Abbott observed a large chart with numerous names on it. Dr. Chen explained to them that the chart was an attempt to show the organizations involved in the seismic design of Diablo Canyon and how they interfaced with one another. One of the names listed on the chart was "Newmark". Commissioner Gilinsky was surprised to find "Newmark" on the

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chart, since Dr. Nathan Newmark had been a consultant to the NRC staff on Diablo Canyon. Commissioner Gilinsky asked why Newmark's name appeared on the chart. Someone (probably Dr. Chen) responded that they thought Dr. Newmark had contributed to the design of the facility. Commissioner Gilinsky then asked whether Dr. Newmark had worked for PG&E. Someone responded to the question (probably Dr. Chen) in a way that did not rule out that possibility. Commissioner Gilinsky returned to Washington, informed Chairman Palladino of his conversation, and suggested that the matter be further examined. The Commission designated James A. Fitzgerald and Trip Rothschild of the Office of the General Counsel to interview Dr. Robert L. Cloud and his associates, as well as the associates of the late Dr. Nathan Newmark.

Before conducting those interviews, we interviewed Commissioner Gilinsky and Mr. Abbott and asked them to describe their visit to the Cloud offices and the basis for their impression that Dr. Newmark conceivably could have been employed by PG&E on Diablo Canyon. Jack W. Roe, Chairman Palladino's Technical Assistant, was also interviewed. Mr. Roe had visited the offices of Robert L. Cloud and Associates on December 1, 1981. Mr. Roe stated that he had seen the chart in Dr. Chen's office. Mr. Roe had the impression that the individuals listed on the chart had been involved in developing the seismic design of Diablo Canyon. Mr. Roe did not remember seeing Dr. Newmark's name on the chart, although he stated it might have been there.

Review of NRC Staff Contract Files and
Diablo Canyon Docket

The NRC staff files relating to its contract with Dr. Newmark and some documents in the Diablo Canyon docket were also examined. The NRC contract files contained no indication that Dr. Newmark had ever been employed by PG&E on Diablo Canyon.

Dr. Newmark began providing advice to the AEC in approximately 1964, and beginning in approximately 1967 he performed the principal review of the Diablo Canyon seismic design at the construction permit stage of review for the NRC staff. In 1976 staff desired further advice from Dr. Newmark on the Diablo Canyon seismic design and entered into a new contract with him. Dr. Newmark advised the staff that he was currently consulting for Bechtel Power Corporation. In that capacity his tasks included advising Bechtel on generic matters, some of which applied to PG&E's Humbolt Bay facilities (which included two fossil fueled plants and one



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nuclear unit). In April 23, 1976, Ben C. Rusche, Director, NRR, made the determination that his work for Bechtel did not create the potential for an actual conflict of interest, that the appearance of a conflict of interest which existed was acceptable, and that Dr. Newmark's participation in the Diablo Canyon review for the NRC staff was warranted because Dr. Newmark's preminence in his field rendered his work for the NRC in the public and the Government's best interest.

One of the terms of his contracts with the NRC was to report to the NRC any employment which could give rise to an actual or apparent conflict of interest with respect to the work he performed for the NRC. Throughout the years, Dr. Newmark sent several letters to the staff advising it of his proposed consulting activities and seeking staff approval from a conflict of interest perspective. A review of the staff files produced no documentation that Dr. Newmark had ever sought staff approval to work for PG&E on Diablo Canyon.

We also examined documents in the Diablo Canyon docket that Dr. Newmark had authored. All of the documents examined had been produced for the NRC staff. There was no indication that Dr. Newmark had been employed by PG&E.

Interview With Robert L. Cloud

We interviewed Robert L. Cloud in his Berkeley office on January 21. After we explained the purpose of our visit, Dr. Cloud took us to Dr. Pao Chen's office where the aforementioned chart was located. On the upper left portion of the chart there appeared a box with the entry "N. Newmark, design input". The N. Newmark portion of the entry was crossed out. Dr. Cloud explained the chart, which was entitled "Seismic Design Chain", noting that the names on the left side represented those who had provided input to PG&E on the design of Diablo Canyon. The chart indicated that the design information PG&E had gathered had been transmitted to URS/Blume, the consulting firm that was responsible for doing the seismic analysis of the buildings in order to determine floor response spectra for qualifying equipment. The names on the right of the chart represented the contractors who had assisted PG&E in the qualification of the equipment.

Dr. Cloud stated that Newmark's name had been crossed out because he had not participated in the seismic design, but had instead analyzed the ground motion at the site. Dr.



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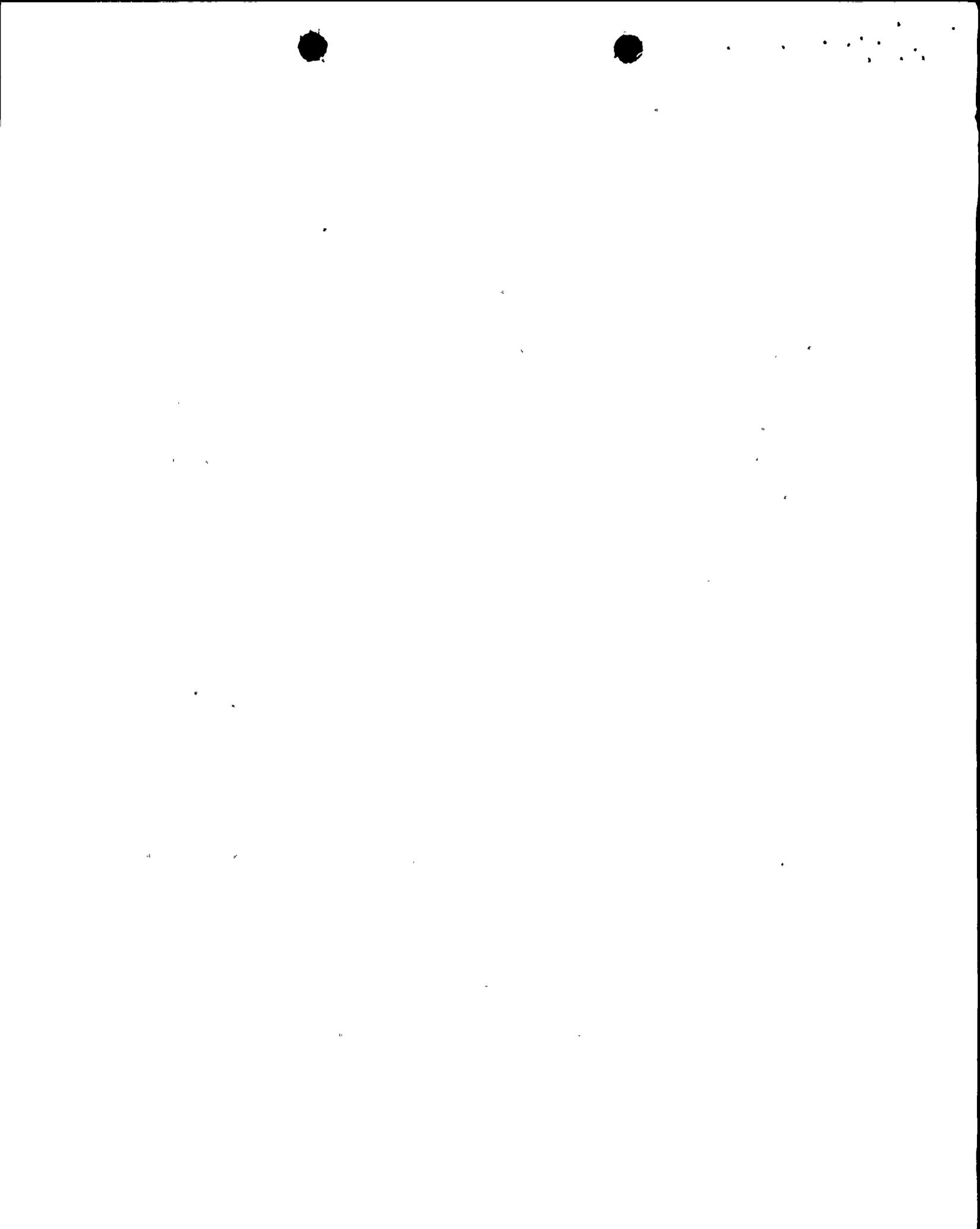
Cloud stressed that the determination of the ground motion was outside the scope of the reverification program that his firm was involved in. Therefore, his firm was not reviewing work of Dr. Newmark and the others who had participated in determining the ground motion for the Hosgri earthquake.

Dr. Cloud was clearly under the impression, however, that Dr. Newmark had performed ground motion work for PG&E. He stated that the chart had been prepared by Dr. Chen from lists of PG&E's Diablo Canyon contractors that the utility had provided to Dr. Cloud, and also on the basis of conversations with numerous individuals associated with the project. Dr. Cloud stated that at the time the chart was prepared the primary concern was that all potential contributors to the facility's seismic design be listed. Dr. Cloud emphasized that the chart was in effect a draft list and that it had been subsequently determined that only approximately 25% of the companies on the chart had indeed been involved with the seismic safety-related design of the plant.

Dr. Cloud procured the lists which set forth PG&E's contracts. We examined those lists and found no mention of Dr. Newmark or of his associate, Dr. William J. Hall. Dr. Cloud then met with his staff to discuss the matter.

After that meeting with his staff, Dr. Cloud speculated that Dr. Newmark's name had been placed on the chart because his work appeared in a document entitled "Seismic Evaluation for Postulated 7.5M Hosgri Earthquake", Units 1 and 2, Diablo Canyon Site, PG&E (November 1978). That document which was prepared by PG&E and submitted to the NRC included response spectra charts prepared by Dr. Blume and Dr. Newmark. The Newmark charts did not indicate that they had been prepared for the NRC staff. Dr. Cloud surmised that his staff, at the time Dr. Newmark's name was placed on the chart, had not realized that these charts had been prepared for the NRC.

Dr. Cloud concluded the interview by stating that he had no reason to believe that Dr. Newmark had been employed by PG&E on Diablo Canyon and that indeed, based on the absence of his name on the PG&E contract lists, his conversations with his staff, and his review of the "Seismic Evaluation" described above, he does not believe that Dr. Newmark was employed by PG&E on the project.



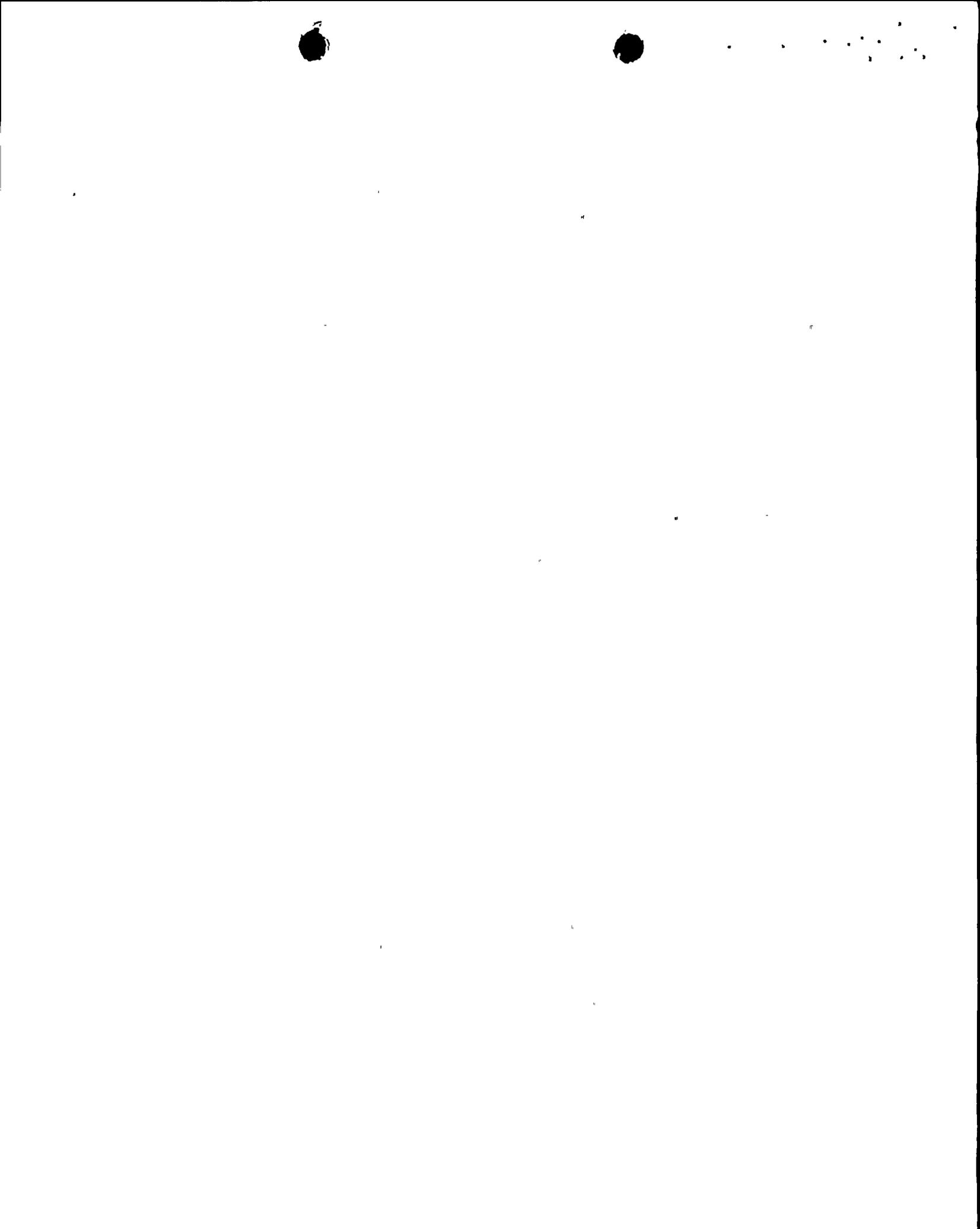
Interview with Dr. Pao Chen

After interviewing Dr. Cloud, we interviewed Dr. Pao Chen, one of Dr. Cloud's associates. Dr. Chen stated that in October 1981, Dr. Cloud's firm was hired to reverify the adequacy of the Diablo Canyon seismic design. At that time, Dr. Chen had not worked on any matter relating to Diablo Canyon and was not familiar with who had been involved in developing the seismic design. Part of the reverification project is to develop a seismic design chain which listed the contributors to the design of the facility. Dr. Chen was responsible for determining who was involved in the design. In developing the chain, someone mentioned to him that Dr. Newmark might have been employed by PG&E. Dr. Chen did not recall who so advised him. On the basis of that conversation, Dr. Chen placed Dr. Newmark's name on the chart.

Dr. Chen recalls his conversation with Commissioner Gilinsky on November 17, 1981 and remembers the Commissioner asking whether Dr. Newmark had worked for PG&E. Dr. Chen stated that he told Commissioner Gilinsky something to the effect that he was not sure but that Dr. Newmark's name had come up in connection with the Diablo Canyon design, so his name had been placed on the chart. After Commissioner Gilinsky's departure, Dr. Chen called PG&E officials who had knowledge of the contracts that the utility had entered into relating to Diablo Canyon to ascertain whether Dr. Newmark had been employed by PG&E. The PG&E officials stated that Dr. Newmark had not been employed by PG&E on the project. Dr. Chen cannot recall the names of the officials with whom he spoke. After the conversations with the PG&E officials, Dr. Chen examined the lists of contractors used by PG&E on the Diablo Canyon facility and did not find Dr. Newmark's name listed. He then crossed Newmark's name off the chart. Dr. Chen does not believe that Newmark was employed by PG&E on the project.

Interview Of William J. Hall

On January 23, we interviewed Dr. William J. Hall in his offices in Urbana, Illinois. Dr. Hall is a professor of Civil Engineering at the University of Illinois. Dr. Newmark was a professor at that same institution for more than 40 years. Dr. Hall stated that he had served as a major consultant to Dr. Newmark from 1957 until Dr. Newmark's death in early 1981. Dr. Hall stated that he had



worked on numerous projects with Dr. Newmark, but that Dr. Newmark had undertaken many projects without his assistance.

Dr. Hall stated that to the best of his knowledge Dr. Newmark had never been employed directly by PG&E on any project. He asserted that Dr. Newmark had worked for Bechtel on PG&E's Humboldt Bay nuclear facility, and that beginning in 1978, Dr. Newmark worked on a Western Gas LNG facility. He believed that PG&E is a part owner of that facility. At our request he called the Chief Engineer of Western LNG Terminal who confirmed that PG&E was a part-owner. Dr. Hall stated that he believed that the NRC staff had been advised of Mr. Newmark's involvement in these projects and had determined that these activities did not preclude Dr. Newmark from advising the NRC staff on Diablo Canyon.*

Dr. Hall stated that Dr. Newmark's work for the NRC staff on Diablo Canyon could be divided into three phases: (1) 1967-1969; (2) 1974-1978; and (3) 1978-1980. Dr. Hall stated that he worked closely with Dr. Newmark on Diablo Canyon during the first phase, fairly closely with Dr. Newmark during the second phase, and only slightly with Dr. Newmark during the final phase. Dr. Hall unequivocally stated that to the best of his knowledge, Dr. Newmark had never been employed by PG&E to work on Diablo Canyon. He further emphasized that Dr. Newmark was very concerned with avoiding actual or potential conflicts of interest.

Dr. Hall made his and Dr. Newmark's files available for perusal. Many of the Diablo Canyon documents had been thrown away, but many documents remained. A quick review of these files produced no indication that Dr. Newmark had ever been employed by PG&E on Diablo Canyon.

* We found no indication in the NRC staff files that Dr. Newmark had sought staff approval for the Western Gas consultantship. It is our belief, however, that prior to February 1980, staff decisions on potential organizational conflicts of interest were not always documented. Like the Bechtel consultantship, his activities on the LNG project could create an appearance of conflict of interest. We did not pursue this matter further because it was outside the scope of this inquiry.



Interview of Delbert E. McCulley

After interviewing Dr. Hall, we interviewed Mr. Delbert E. McCulley. Mr. McCulley, who is employed by the Civil Engineering Department at the University of Illinois, served as Dr. Newmark's bookkeeper from 1954 until Dr. Newmark's death in 1981. Mr. McCulley stated that to the best of his knowledge, Dr. Newmark had never entered into a consulting contract with PG&E during this period. He stated that Dr. Newmark would not have worked for PG&E without receiving compensation. He stated that the work Dr. Newmark performed relating to Diablo Canyon had been performed under contract with the AEC-NRC staff.

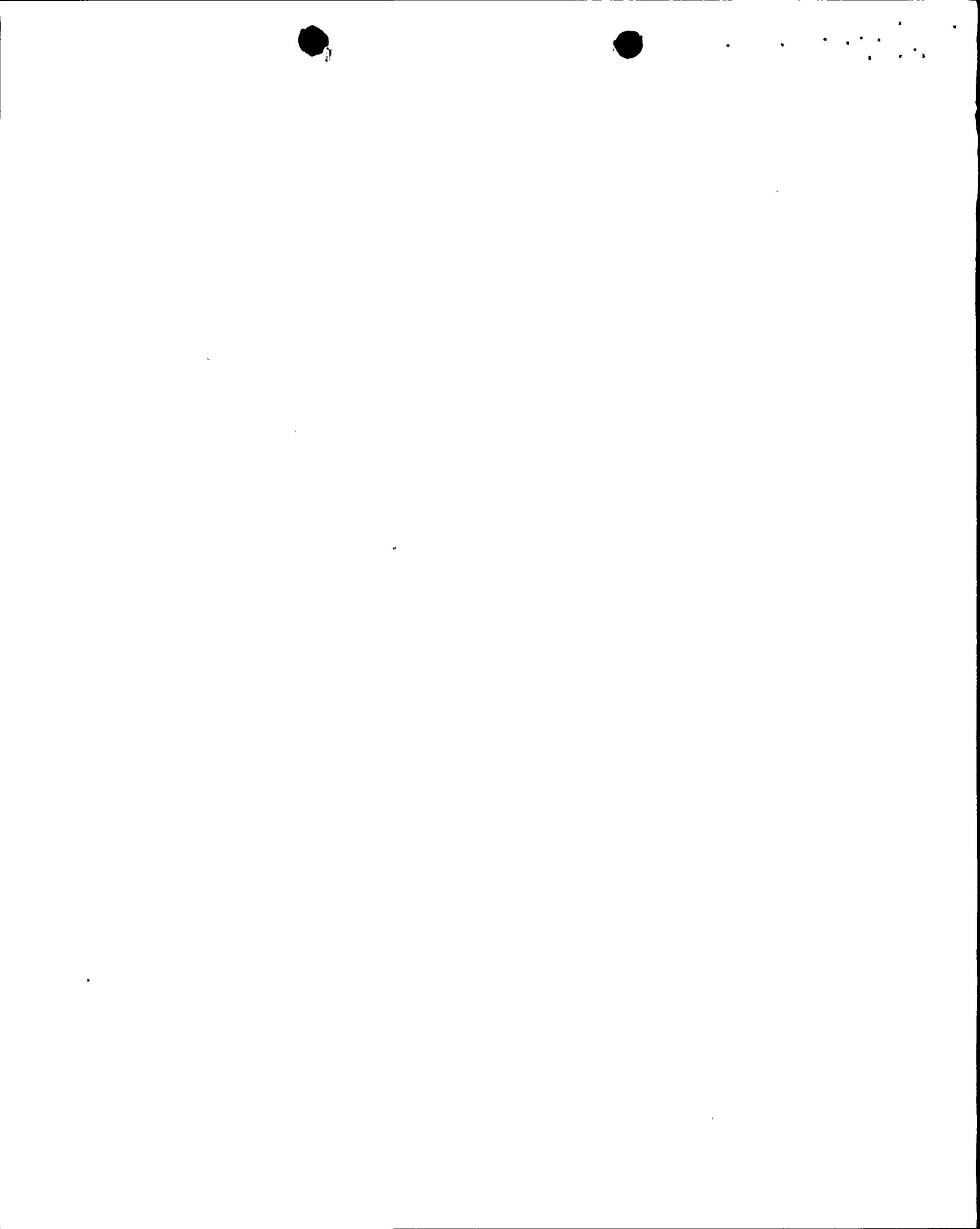
Conclusions

Our review of staff contract files, the docket, and the interviews summarized above revealed no indication that Dr. Newmark had been employed by PG&E on the Diablo Canyon project. Accordingly, we recommend that the inquiry be closed.

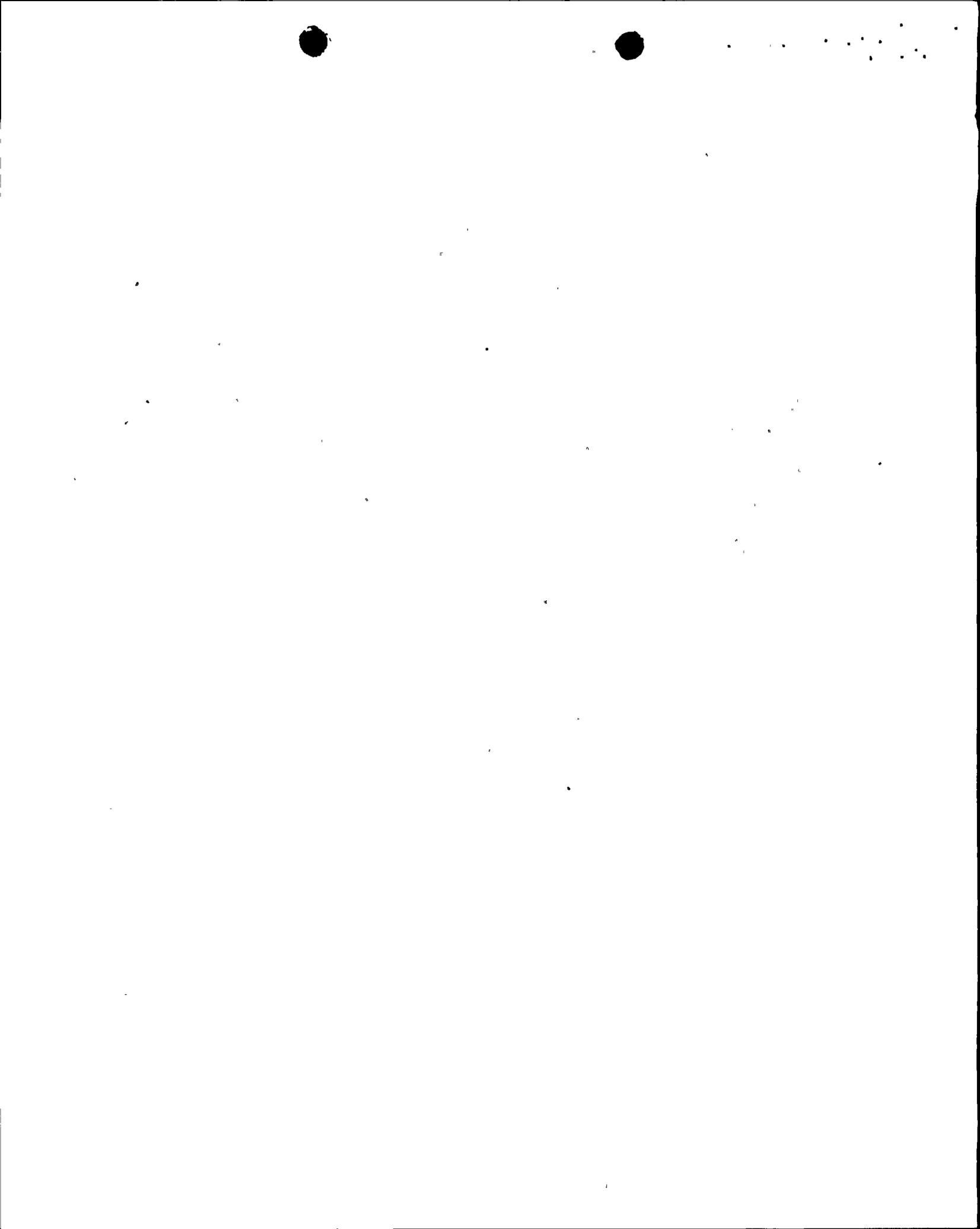
Attachments:

1. Summary of Interviews
2. Partial Recreation of Chart in
Dr: Chen's Office

cc: Leonard Bickwit, Jr.
Forrest J. Remick
Samuel J. Chilk



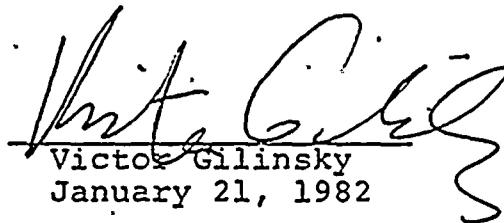
ATTACHMENT 1

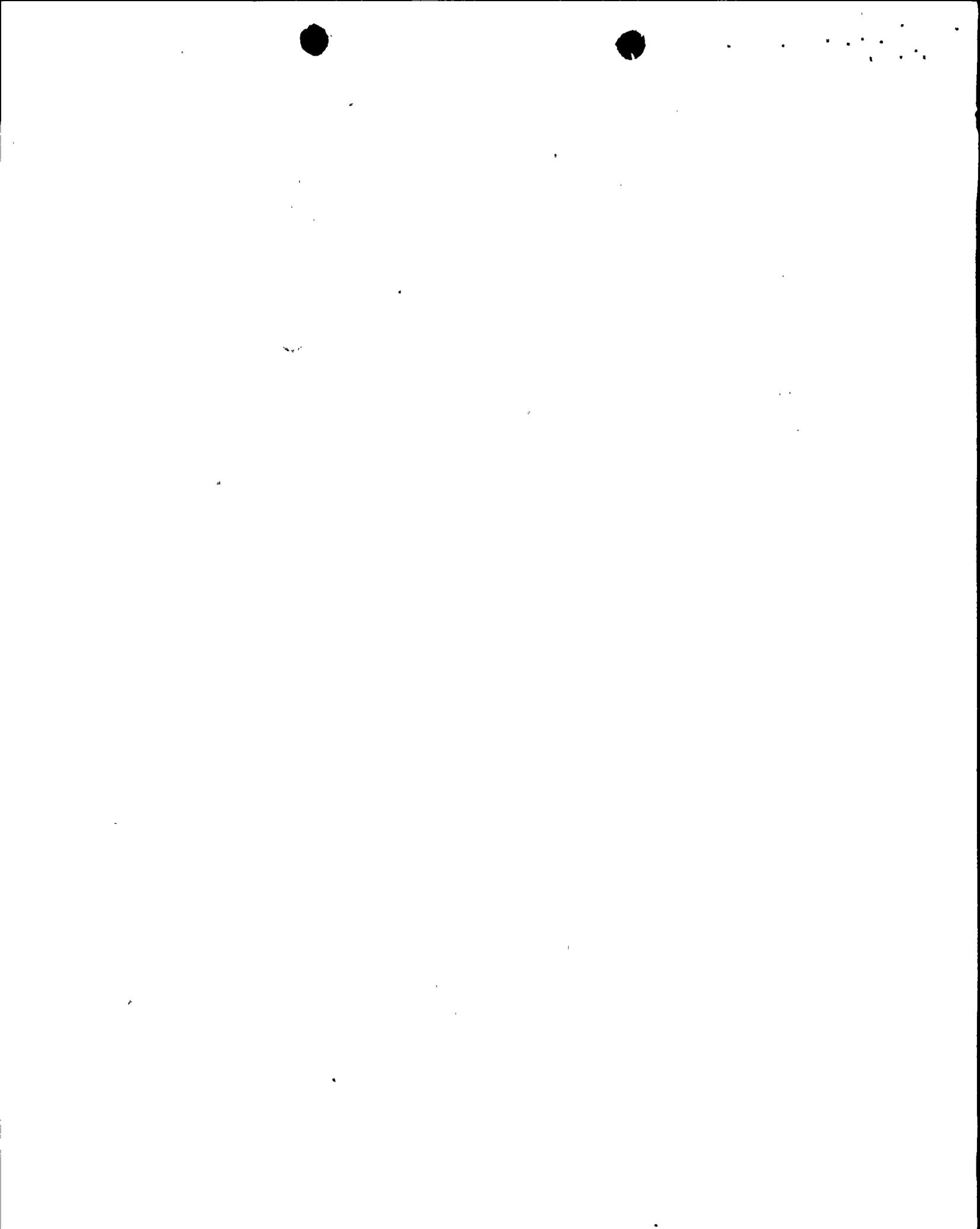


STATEMENT OF COMMISSIONER VICTOR GILINSKY

On January 19, 1982, I was interviewed in my office by James A. Fitzgerald and Trip Rothschild, of the Office of the General Counsel, about an aspect of my visit to the offices of Robert L. Cloud and Associates, Inc. I was asked to prepare a summary of my remarks and advised that this summary might be made public at a later date.

On November 17, 1981, after a meeting with Robert L. Cloud at the offices of Robert L. Cloud and Associates, Inc., in Berkeley, California, I and three other NRC personnel (Edward Abbott, Robert H. Engelken and Bobby H. Faulkenberry) were asked if we would meet the Cloud staff in their offices. In one of them, on a white board posted on the office wall, there was a diagram of the Diablo Canyon seismic design process. In one of the circles, representing the contributors to the seismic design of Diablo Canyon, I was surprised to find the name "Newmark" since Mr. Newmark had been the NRC staff's consultant. I asked what his name was doing there. Someone responded to the effect that it appeared that Mr. Newmark contributed to the design. I then said that I thought Newmark was working on Diablo Canyon for the staff and asked whether Newmark did work for PG&E. Someone responded to this question in a way which did not rule out the possibility. After returning to Washington I told the Chairman about this and suggested that the Commission needed to clear up the point.


Victor Gilinsky
January 21, 1982



STATEMENT OF EDWARD C. ABBOTT

My name is Edward C. Abbott. I am Technical Assistant to Commissioner Victor Gilinsky, U.S.N.R.C. On January 18, 1982, I was interviewed in my office by James A. Fitzgerald and Trip Rothschild, of the Office of the General Counsel, with regard to a visit I made to the offices of Robert L. Cloud and Associates, Inc. I was asked to prepare a summary of my remarks and advise that the summary might be made public at a later date.

On November 17, 1981, I accompanied Commissioner Gilinsky, Robert M. Engelken (Administrator of NRC Region V), and Bobby H. Faulkenberry (Chief, Reactor Construction Projects Branch, NRC, Region V) to the Offices of Robert L. Cloud and Associates, Inc., in Berkeley, California, to discuss the Diablo Canyon seismic reverification being performed by Cloud and Associates. We arrived at approximately 3 p.m. and met with Mr. Cloud in his personal office. A PG&E engineer, whose name I do not recall, also participated in the meeting. The meeting lasted approximately an hour and a half and consisted of an explanation of the reverification program by Mr. Cloud and of a general discussion of its features.

At the end of the meeting, Mr. Cloud suggested that we meet his staff. We met various members of the Cloud staff in their offices. In one of the offices, two or three offices away from Mr. Cloud's occupied by a senior engineer, whose name I do not recall, I observed a big sheet of white paper posted on the wall. The engineer explained that the chart was an attempt to show how organizations involved in the seismic design of Diablo Canyon interfaced with one another. The chart consisted of many names with circles drawn around them, linked by arrows. I do not remember there being a title on the chart. The name "Newmark" (without initials) was on the chart as well as others such as Stone and Webster, etc. I was surprised at the number of individuals and organizations involved as illustrated by the chart. I received the impression that the Cloud and Associates engineer thought that the people named on the chart were hired by PG&E to work on the design of Diablo Canyon.

Someone pointed out the "Newmark" entry, and someone else said something to the effect that "Newmark worked on it." I believe all the NRC party were in the room at this time. I would estimate that we spent no more than five minutes in this office. This was the last stage of our visit and we left the Cloud offices.

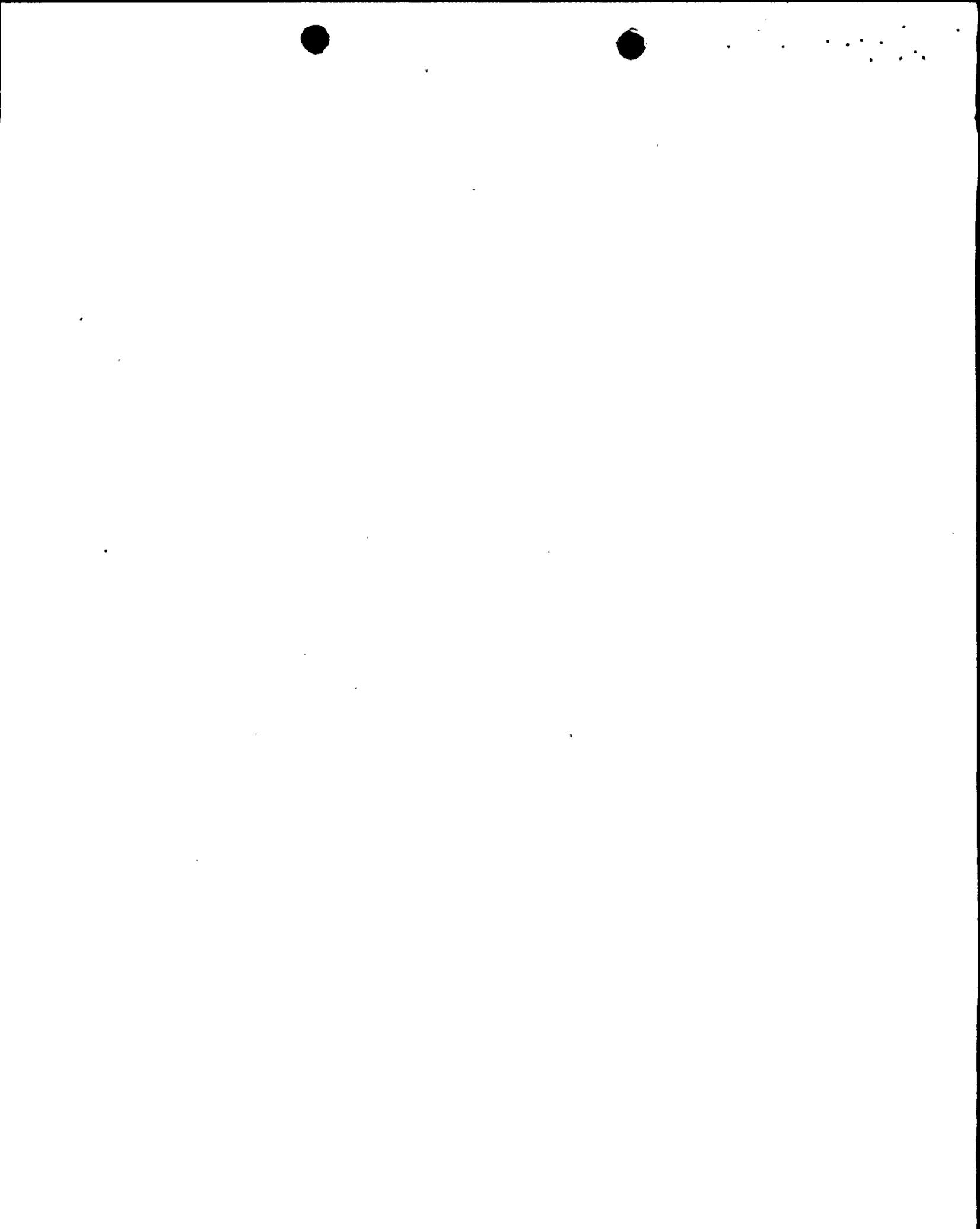

Edward C. Abbott
January 20, 1982



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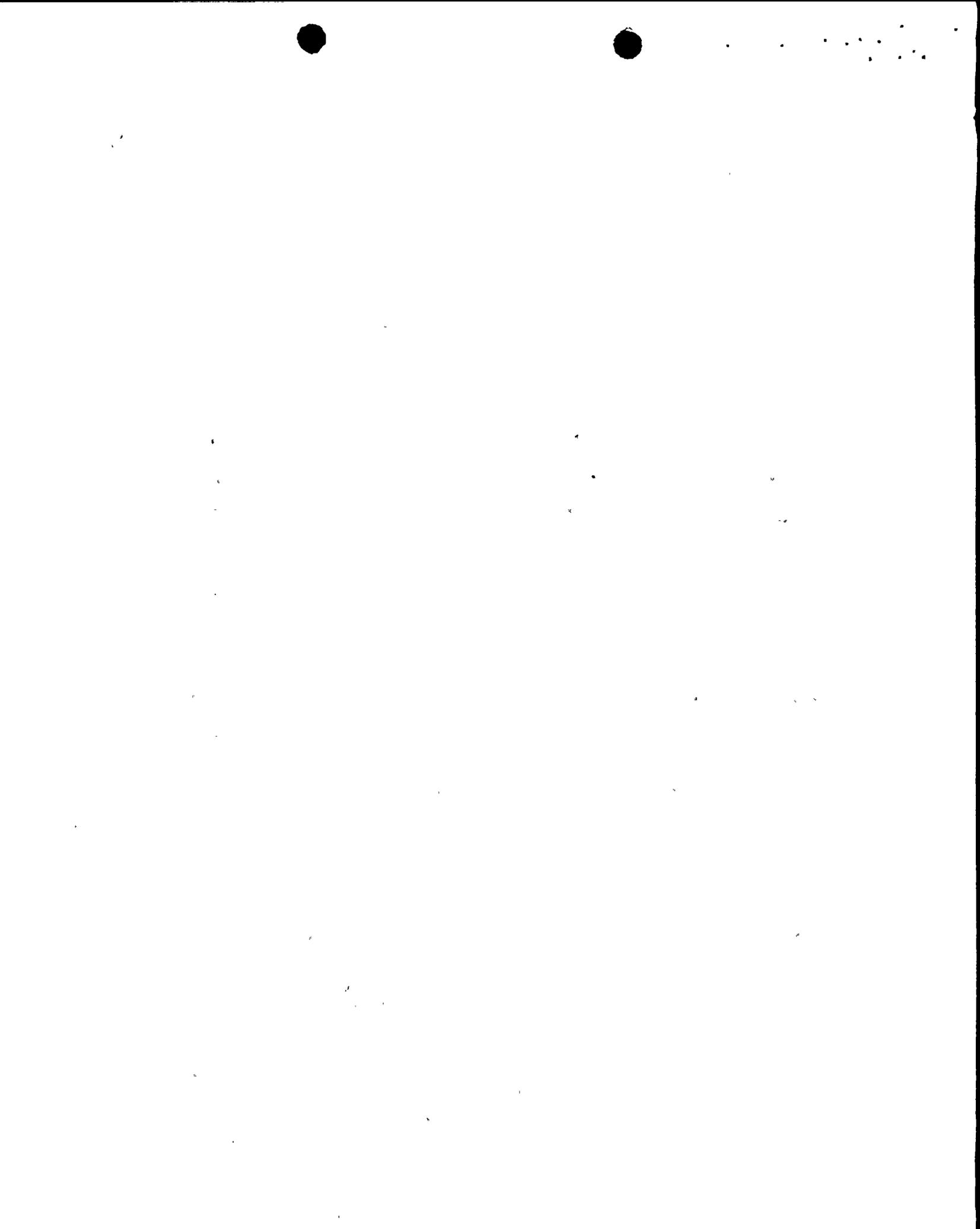
SUMMARY OF INTERVIEW WITH JACK W. ROE

On January 18, 1982 Trip Rothschild of the Office of the General Counsel interviewed Jack W. Roe, Technical Assistant to Chairman Palladino, in his office. Mr. Roe stated that on December 1, 1981 he went to the offices of Robert L. Cloud and Associates in Berkeley, California and met with Mr. Cloud and his associates for approximately two hours. Jesse L. Crews of NRC's Region V was also in attendance. Mr. Roe thought one other NRC employee might have been present. During the course of his visit, he was shown a multi-colored chart (which he thought may have been a large piece of paper) which was approximately four feet by six feet. On the chart were numerous handwritten names. Mr. Roe was told that the chart had been prepared as a management tool and listed the people who might have been involved in the seismic design of Diablo Canyon. Some names were circled. Mr. Roe had the impression that these were the individuals who had in fact participated in developing the design. Mr. Roe did not know whether the chart listed individuals who had or might have been employed by PG&E or included those employed by other parties to the Diablo Canyon proceeding. Mr. Roe does not remember seeing Nathan Newmark's name on the chart, although he stated it might



have been there. Mr. Newmark was not mentioned during the discussion of the chart which lasted approximately five minutes.

Jack W. Roe
Jack W. Roe

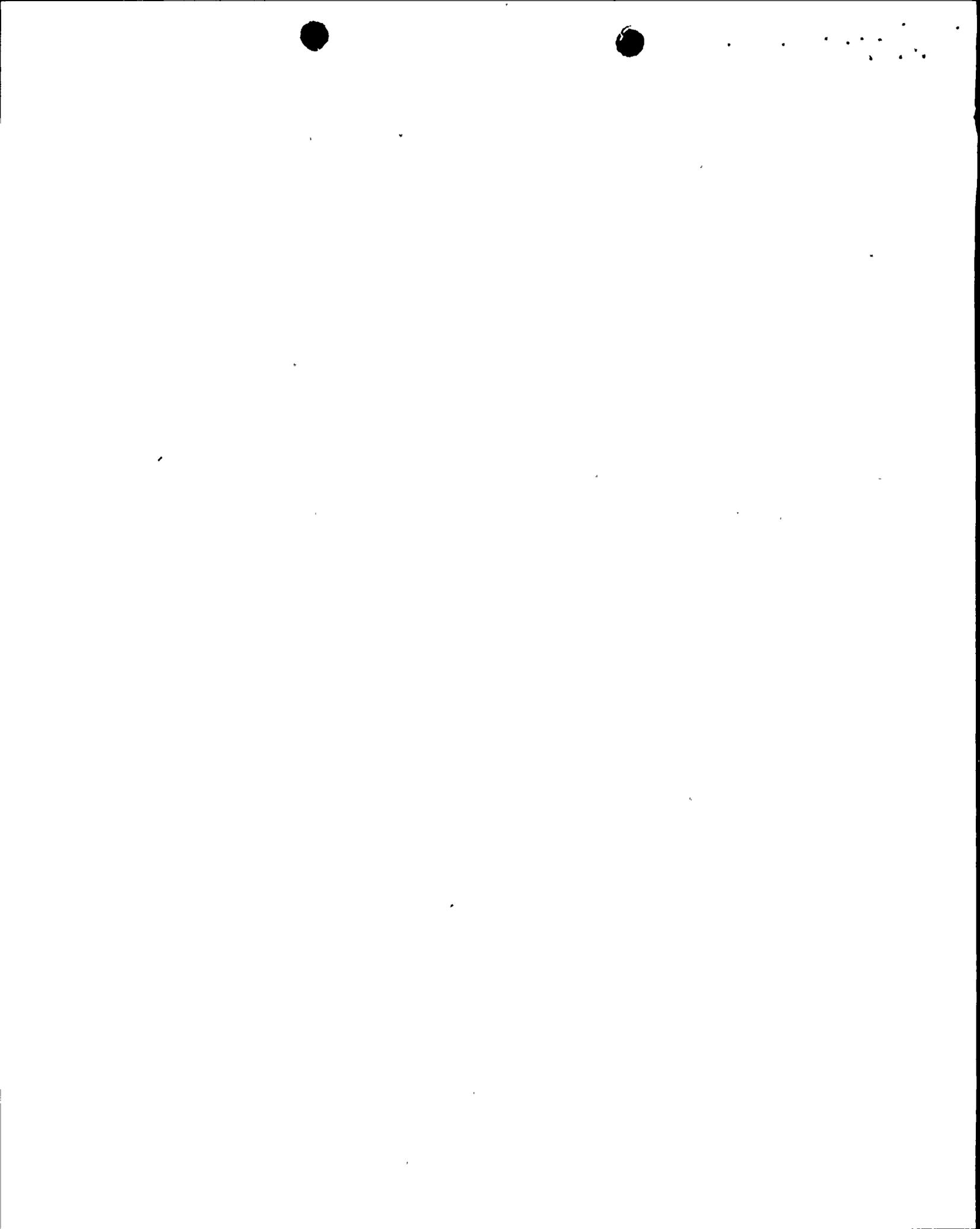


SUMMARY OF INTERVIEW WITH ROBERT L. CLOUD

On January 21, 1982, James A. Fitzgerald and Trip Rothschild of the Office of the General Counsel interviewed Robert L. Cloud in his offices in Berkeley, California. The interview commenced with an explanation to Dr. Cloud of the purpose of the interview. Specifically, Dr. Cloud was advised that during Commissioner Gilinsky's visit of November 17, 1981, to the Cloud offices, he observed a chart in the office of one of Dr. Cloud's associates which contained the name "Newmark". On the basis of the chart and a brief conversation with the associate, Commissioner Gilinsky gained the impression that Nathan Newmark might have been employed by PGandE to perform services related to Diablo Canyon. It was this matter that the Commission wanted to be further explained. ^{or JAF} *Plu*

Dr. Cloud was told that a summary of his interview would be prepared and given to him for review and signature, that he could keep a copy, and that the summary might be made public in the near future. He was advised that the interviewers preferred that this interview be kept confidential. He stated that because PGandE was his client, he preferred to contact senior PGandE Officials after the interview.

Dr. Cloud then proceeded to the office of Dr. Pao Chen, where the above mentioned chart was located. (Dr. Chen did not arrive in his office until after the interview was concluded.) In the upper left hand corner of the chart there appeared a box with the entry "N. Newmark, design input". The N. Newmark portion of the entry was crossed out. Dr. Cloud explained the chart, noting that the left portion which contained many boxes



represented those who provided input to PGandE on the design of Diablo Canyon. The chart indicated that the design information PGandE gathered was transmitted to URS/Blume who was responsible for doing the seismic analysis of the buildings in order to determine floor response spectra for use in qualifying equipment. The numerous boxes on the right of the chart represent the contractors who assisted PGandE in the qualification of the equipment.

Dr. Cloud explained that Newmark's name had been crossed out because he had not participated in the seismic design, but instead had analyzed the ground motion at the site. Dr. Cloud stressed from the outset that the determination of the ground motion was outside the scope of the reverification program that his firm was involved in. Therefore, his firm was not reviewing the work of Dr. Newmark and others who participated in determining the ground motion for the Hosgri earthquake.

Dr. Cloud speculated that it was conceivable that Dr. Newmark had performed some work for PGandE. He indicated that he knew the chart had been prepared by Dr. Chen from lists of contractors to PGandE that had been provided to Dr. Cloud by the utility and based on conversations with numerous individuals associated with the project. At the time the chart was prepared (October/November) the Cloud organization was concerned that all potential contributors to the seismic design be reflected on the chart because no actual contractor should be omitted from the reverification review. Dr. Cloud emphasized that it was a draft

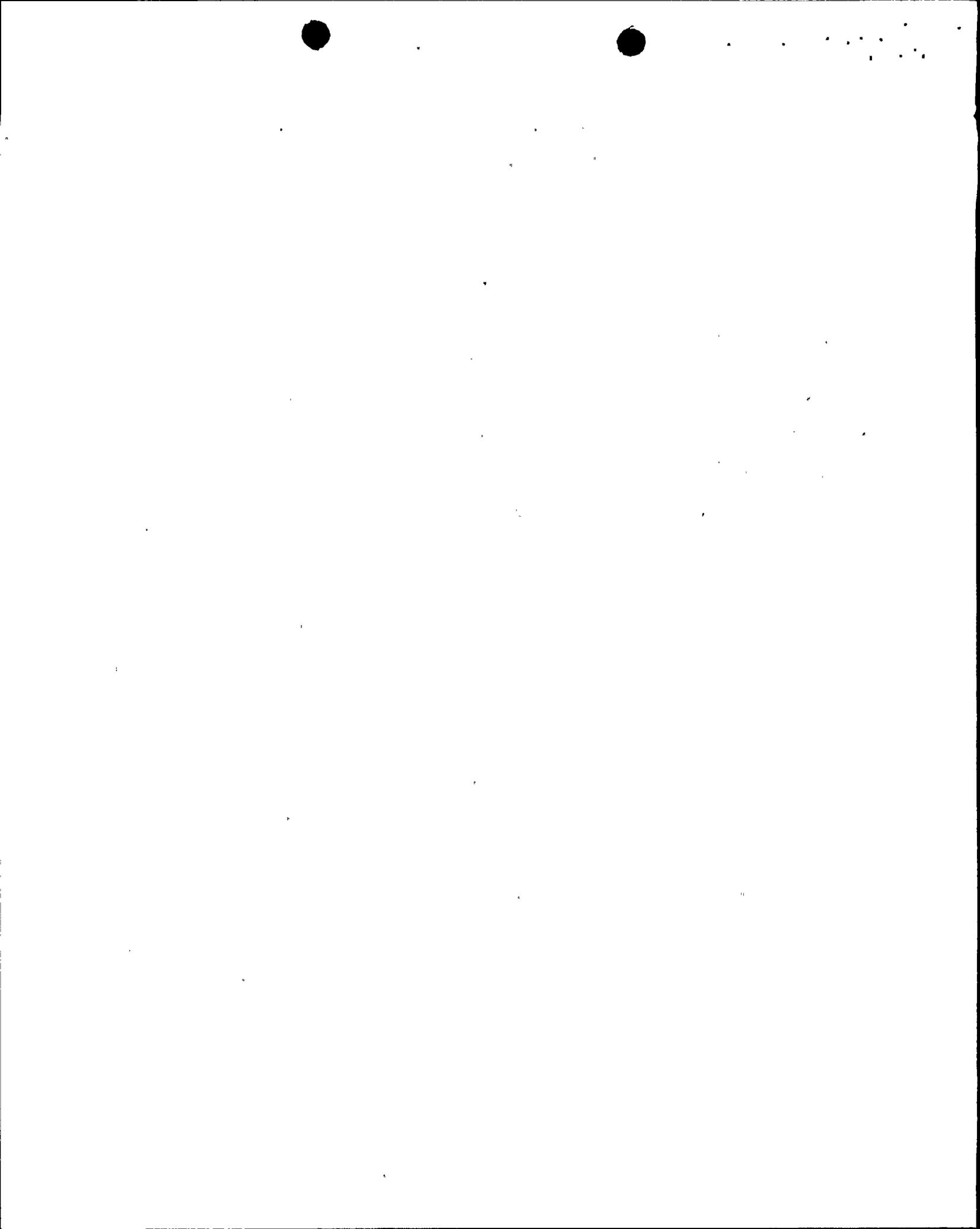
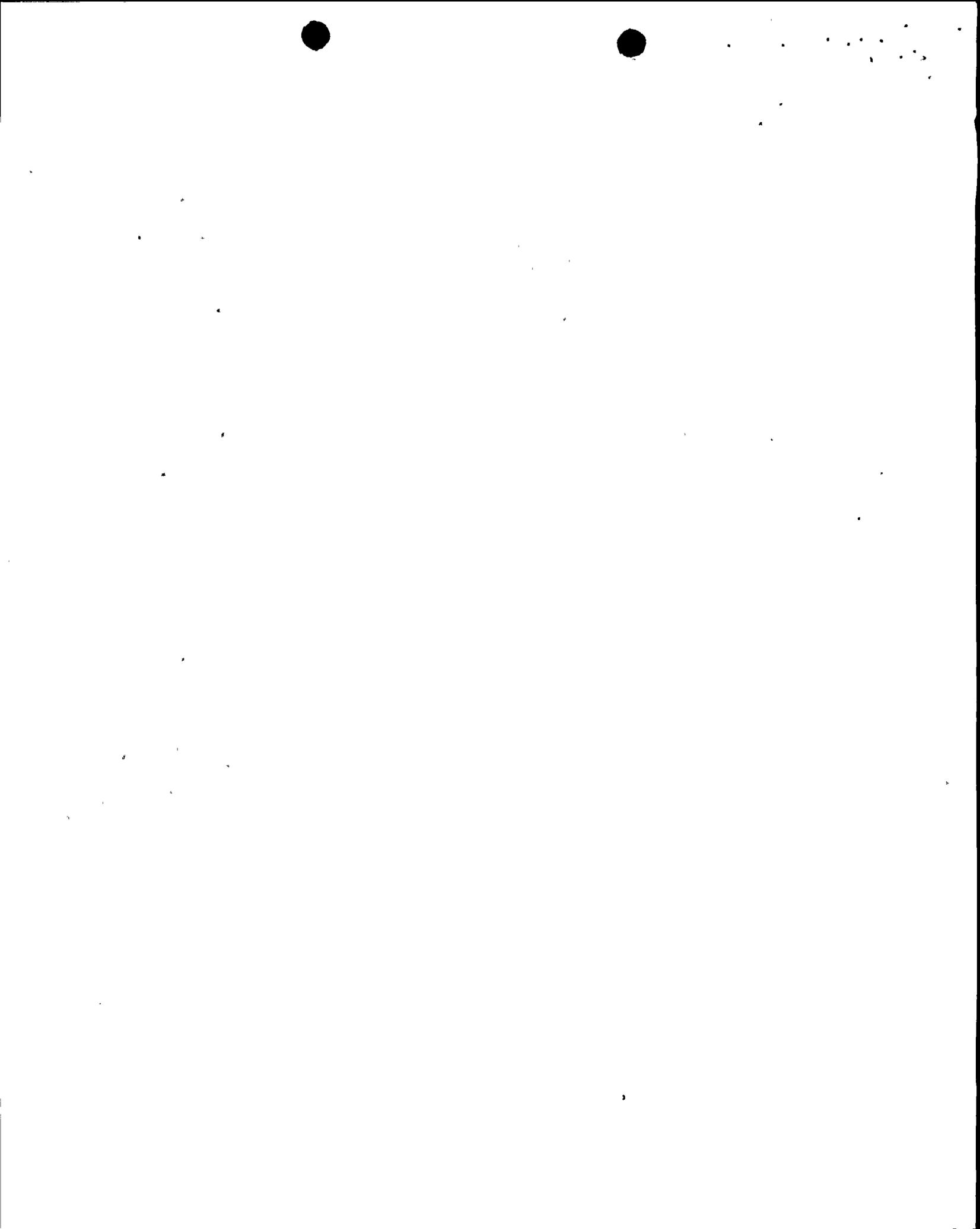


chart and it was subsequently determined that only approximately 25% of the companies on the chart had indeed been involved with the seismic safety-related design of the plant. (These companies are outlined in purple on the chart).

Dr. Cloud procured the lists in his possession which set forth PGandE Diablo Canyon contractors. These lists were entitled "Service Related Contracts (12/5/81); (2) Diablo Canyon AE Contracts (received on 10/6/81); (3) Contract No.//Name of Consultant/Description (received on 11/18/81); (4) Contract Listings (12/4/81); and (5) Consultants used by PGandE for Safety Related Work (received 11/18/81).

Dr. Cloud and the interviewers examined those documents and found no mention of N. M. Newmark or of his associate, Dr. William Hall.

Dr. Cloud speculated that Dr. Newmark's name was on the ~~list~~ ^{Chart} because his work appeared in the Hosgri Report. He provided a document entitled "Seismic Evaluation for Postulated 7.5M Hosgri Earthquake" Units 1 and 2, Diablo Canyon Site PGandE, Volume 1 (November 1978). That document indicated that both Dr. Blume and Dr. Newmark had prepared response spectra based on a 7.5 magnitude Hosgri earthquake. The Newmark chart had been prepared for the NRC Staff by Dr. Newmark. The Blume and Newmark charts were included in the book. The document indicated that PGandE could use either the Blume or the Newmark spectra in designing the facility subject to certain conditions. One of the conditions was that the Blume spectra would be adjusted so as not to fall below

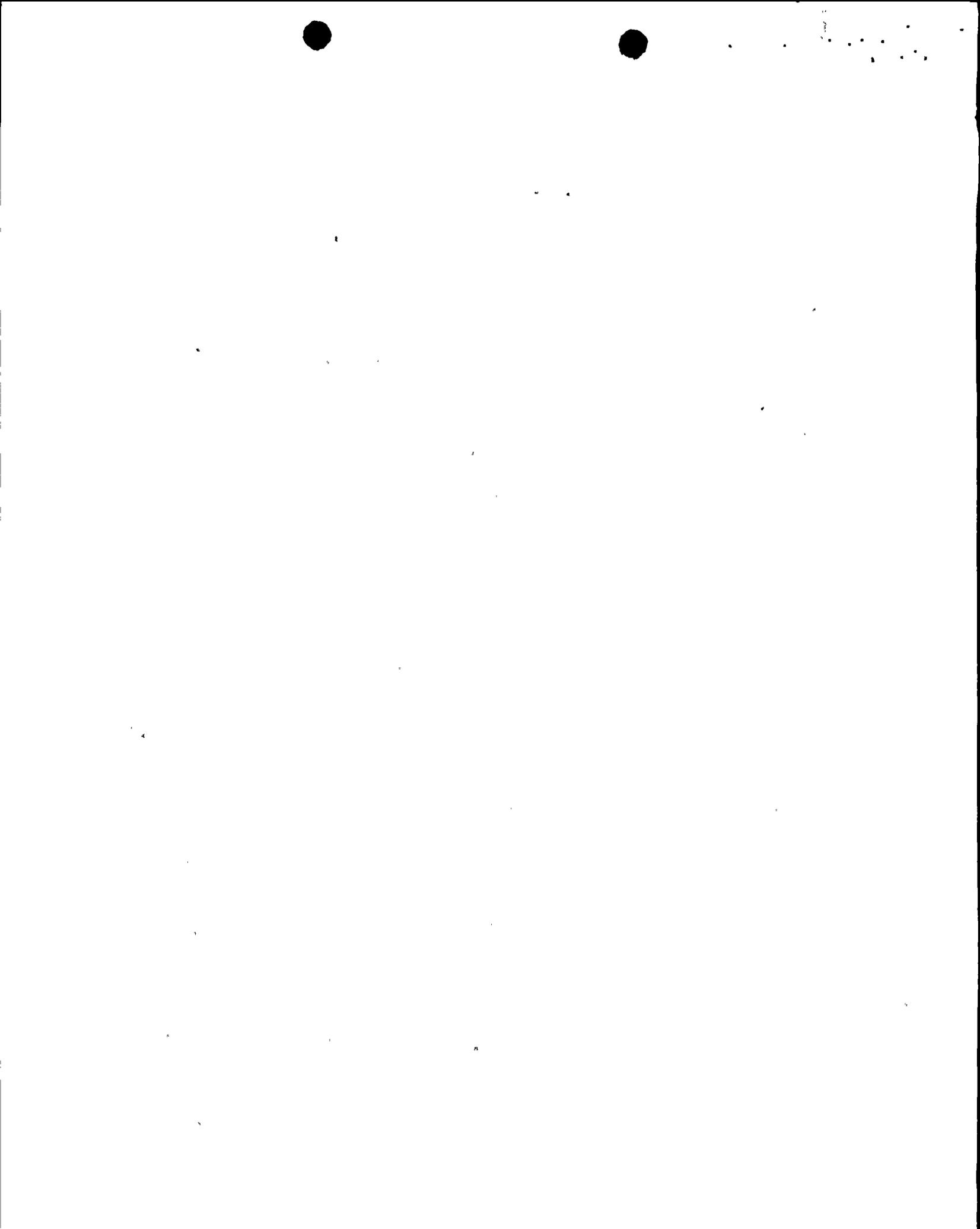


the Newmark spectra at any frequency. See Pages 3-6 and 3-7. Because the charts do not indicate for whom Newmark and Blume had prepared their curves, Dr. Cloud surmised that his staff, at the time Dr. Newmark's name was placed on the chart, had not realized that Dr. Newmark had prepared his work for the NRC rather than for PGandE. Dr. Cloud has no reason for believing that Dr. Newmark was employed by PGandE on Diablo Canyon, and indeed, based on the absence of his name on the PGandE contractor lists, his conversations with his staff, and his review of the "Seismic Evaluations" described above he does not believe that Dr. Newmark was employed by PGandE on this project.

Robert L. Cloud

 ROBERT L. CLOUD
 1/21/82

RLC:hcc



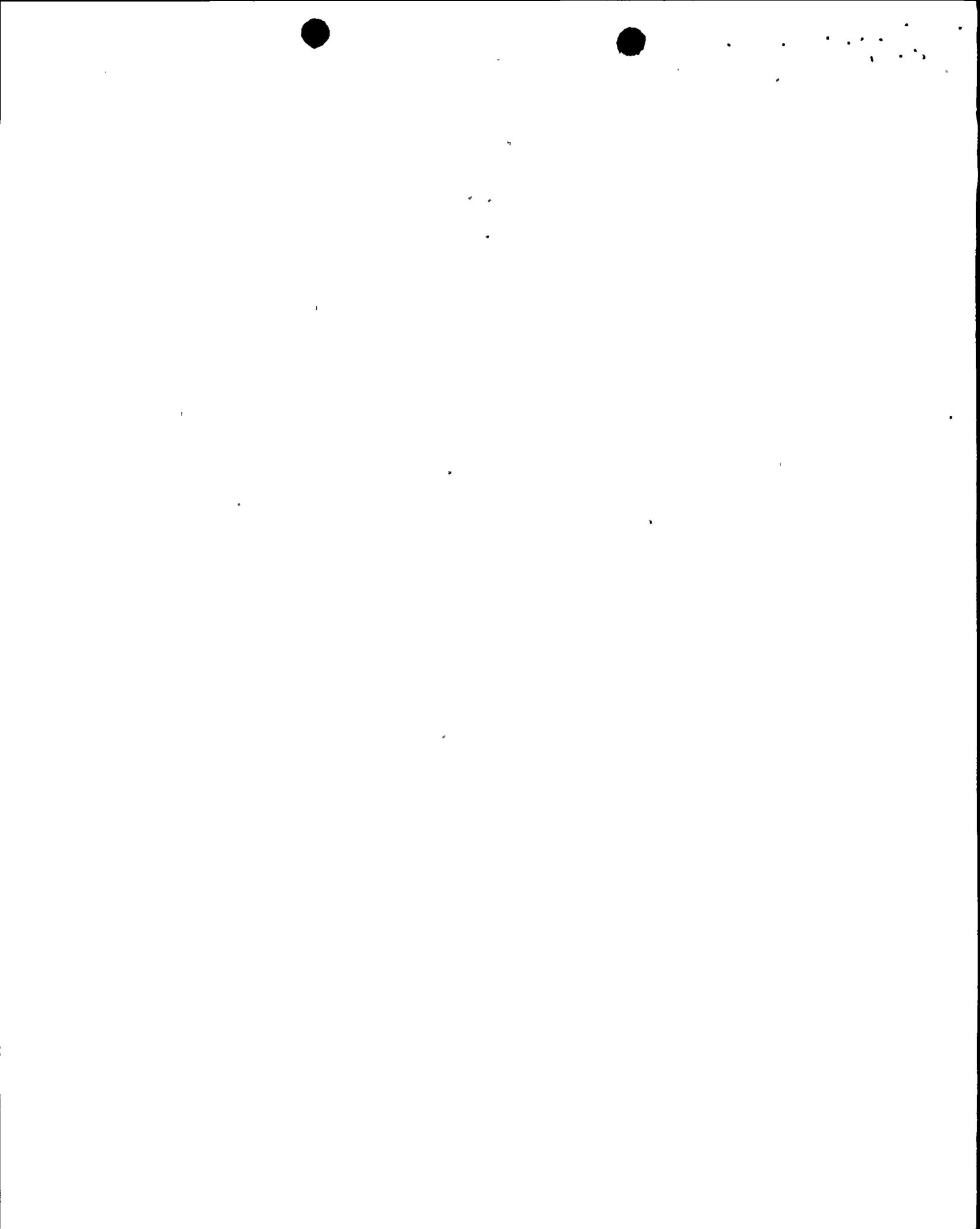
SUMMARY OF INTERVIEW WITH DR. PAO CHEN

On January 21, 1982, James A. Fitzgerald and Trip Rothschild of the Office of the General Counsel interviewed Dr. Pao Chen in the office of Robert L. Cloud ^{and} Associates in Berkeley, California, where he is employed. The interview commenced with an explanation to Dr. Chen of the purpose of the interview. Specifically, Dr. Chen was advised that during Commissioner Gilinsky's visit of November 17, 1981 to the Cloud office, he observed a chart in Dr. Chen's office and gained the impression from an examination of the chart, and a conversation with Dr. Chen, that Nathan Newmark might have been employed by PGandE to perform services related to Diablo Canyon. Dr. Chen was advised that the summary of his interview would be brought to him for signature and might be made public in the near future.

Dr. Chen stated that in October, 1981, Dr. Cloud's firm was hired to verify the adequacy of the Diablo Canyon seismic design. At that time, Dr. Chen had not worked on any matter relating to Diablo Canyon. Part of the verification project was to develop a seismic design chain which listed the contributors to the Diablo Canyon design. In developing the chain, someone mentioned to him that Dr. Newmark might have been employed by PGandE. Dr. Chen does not recall who so advised him. On the basis of that conversation, Dr. Chen placed Dr. Newmark on the chart.

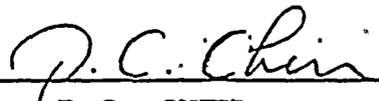
Dr. Chen recalls that Commissioner Gilinsky, upon looking at the chart, said that he thought Newmark was a consultant to the NRC. Dr. Chen replied something to the effect that they

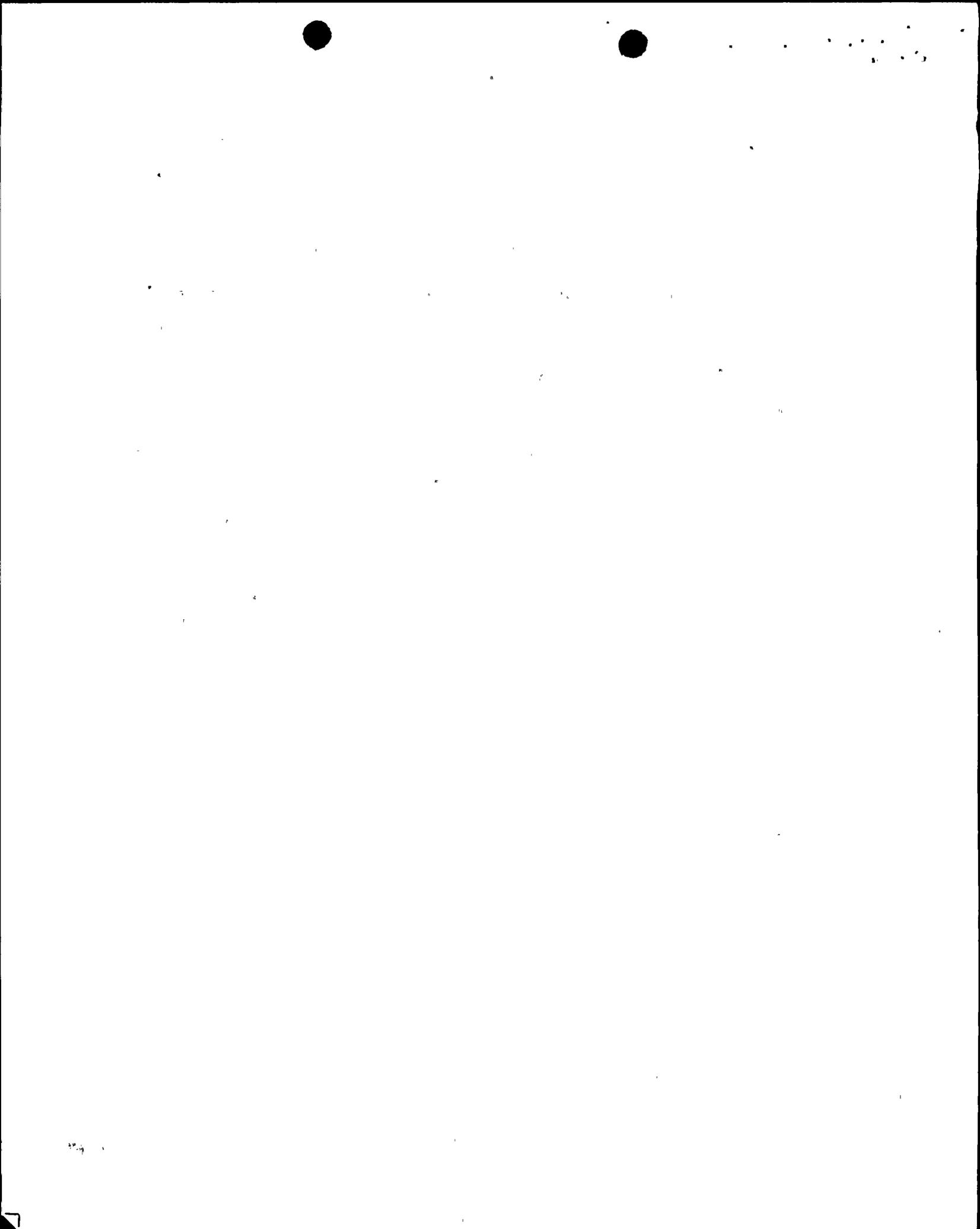
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were not sure but his name had come up in connection with the Diablo Canyon design so he had put the name on the chart. After the Commissioner's departure, Dr. Chen felt he should follow up on this question so he discussed with PGandE Officials who had knowledge of the contracts the utility had entered into relating to Diablo Canyon to ascertain whether Dr. Newmark had been employed by PGandE. The PGandE Officials he spoke with indicated to Dr. Chen that Newmark had not been employed by PGandE on Diablo Canyon. Dr. Chen cannot recall the names of the PGandE Officials with whom he spoke about this because of the passage of time and the casual nature of the conversations.

Dr. Chen also examined the list of contractors used by PGandE on the Diablo Canyon facility and did not find Newmark listed. He then crossed Newmark's name off the list. Dr. Chen doesn't believe that Newmark was employed by PGandE on the project.


P.C. CHEN



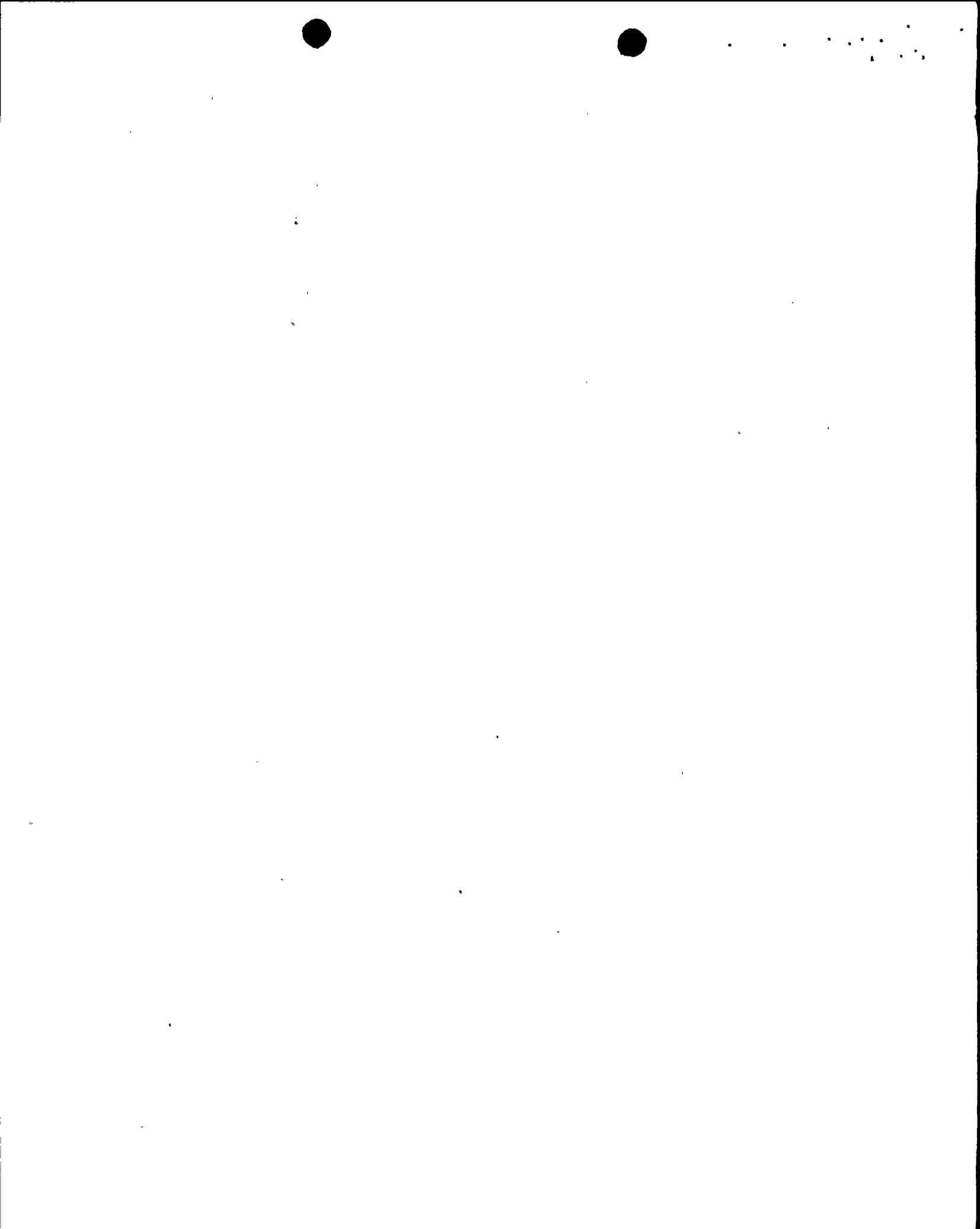
Summary of Interview with Dr. William J. Hall

On January 23, 1982, James A. Fitzgerald and Trip Rothschild of the Office of the General Counsel interviewed Dr. William J. Hall in his offices in Urbana, Illinois. Dr. Hall is a professor of Civil Engineering at the University of Illinois. The interview commenced with an explanation to Dr. Hall of the purpose of the interview. Specifically, Dr. Hall was advised that during Commissioner Gilinsky's visit of November 17, 1981 to the offices of Robert L. Cloud & Associates, he observed a chart in the office of one of Dr. Cloud's associates which contained the name "Newmark". On the basis of the examination of the chart and a brief conversation with the associate, Commissioner Gilinsky gained the impression that Dr. Nathan Newmark might have been employed by PG& E to perform services related to Diablo Canyon. It was this matter that the Commission wanted to be further explored.

Dr. Hall was told that a summary of his interview would be prepared and given to him for review and signature, that he could keep a copy, and that the summary might be made public in the near future. He was advised that the interviewers preferred that the interview be kept confidential.

Dr. Hall stated that his association with Dr. Newmark commenced in 1949 ^h when Dr. Hall was a student at the University of Illinois. Beginning in 1954 Dr. Hall served as a consultant to Dr. Newmark, but that a major formal consultantship did not commence until about 1957. Dr. Hall served as a consultant to Dr. Newmark from 1957 until Dr. Newmark's death in 1981. Dr. Hall also served as an independent consultant during this period.

Dr. Hall stated that he worked on many projects with Dr. Newmark but that Dr. Newmark worked on numerous projects without the assistance of Dr. Hall. Dr. Hall stated that to the best of his knowledge Dr. Newmark had never been employed by PG& E on any project. He asserted that Dr. Newmark had worked for Bechtel on PG& E's Humbolt Bay nuclear facility in the 1960's, and that beginning about 1978



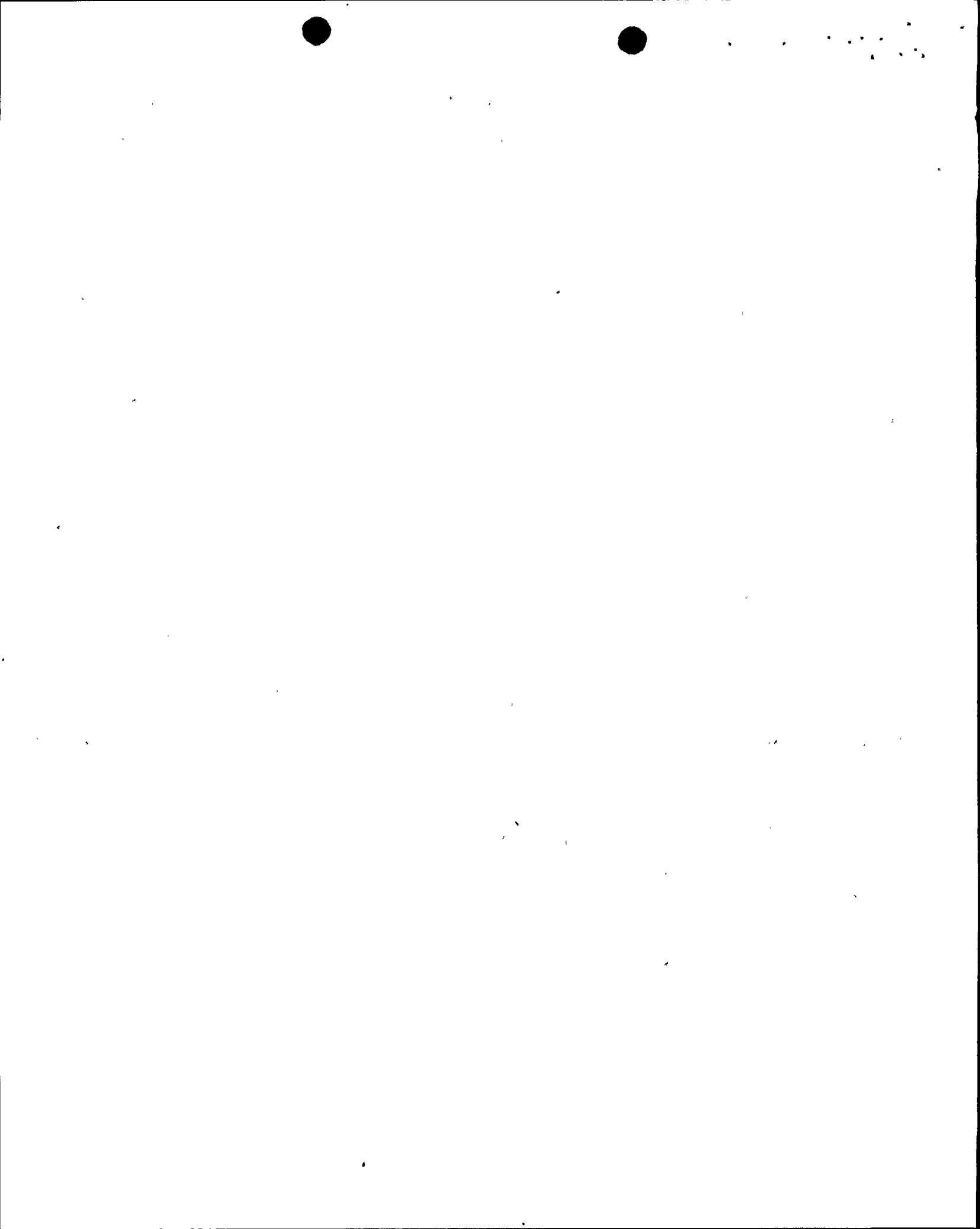
he worked on a Western Gas LNG facility. PG&E is believed to be a part owner of that facility. Dr. Hall stated that he believed that the NRC staff had been advised of Dr. Newmark's involvement in these projects and had determined that these activities did not conflict with the work that Dr. Newmark was performing for the NRC staff on Diablo Canyon.

Dr. Hall stated that Dr. Newmark's work for the NRC staff on Diablo Canyon could be divided into three phases: (1) 1967-69; (2) 1974-78; and (3) 1978-1980. Dr. Hall stated that he worked closely with Dr. Newmark on Diablo Canyon during the first phase, fairly closely with Dr. Newmark during the second phase and only slightly with Dr. Newmark during the final phase. He stated that to the best of his knowledge, Dr. Newmark had never been employed by PG&E on Diablo Canyon. He also stated that to the best of his knowledge, Dr. Newmark had never been employed by URS/Blume, the consulting organization that was heavily involved in developing the seismic design of Diablo Canyon.

Dr. Hall emphasized that Dr. Newmark was very concerned with avoiding actual or potential conflicts of interests and that he cannot believe that Dr. Newmark had ever been employed by PG&E to work on Diablo Canyon.

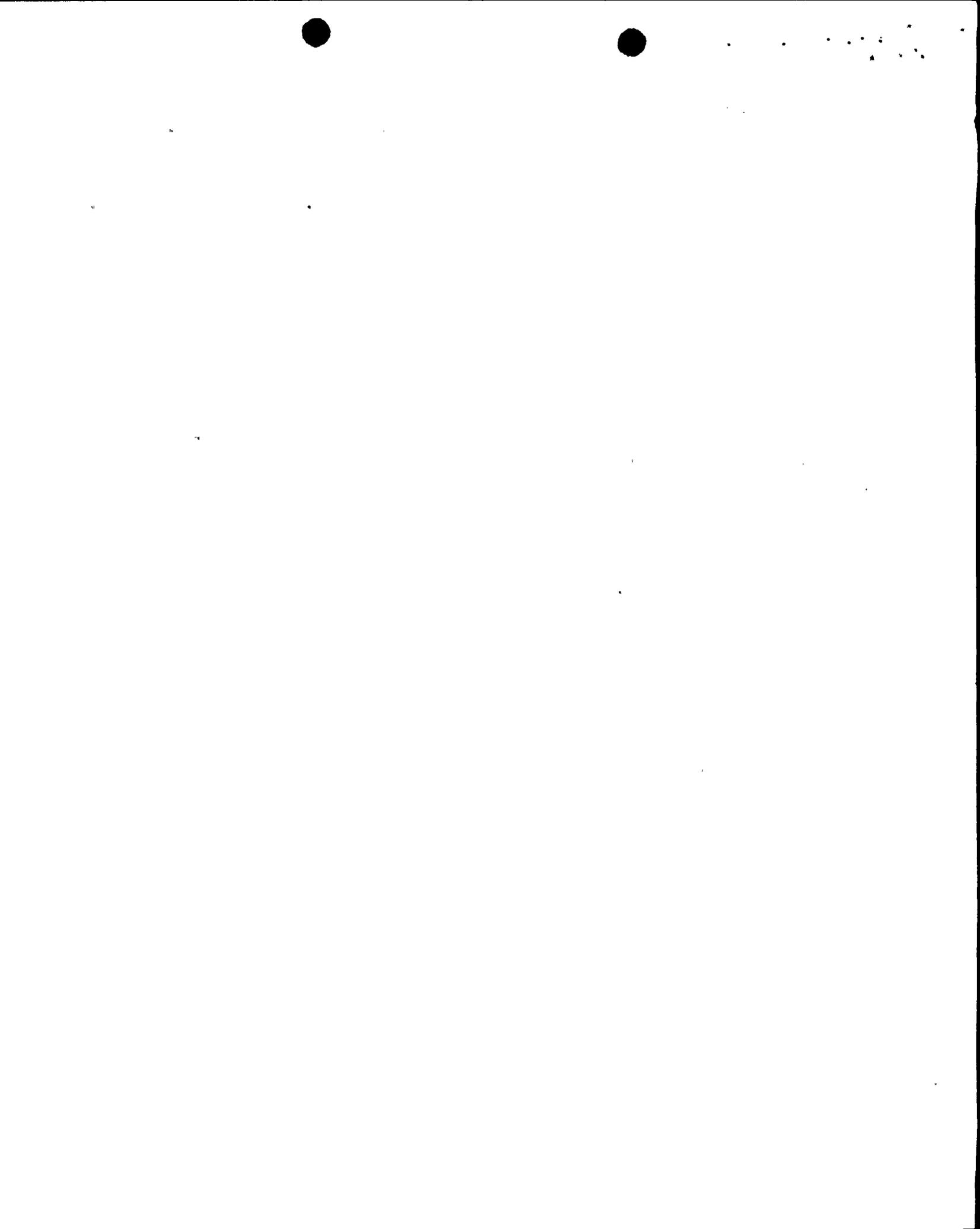
Dr. Hall made several files available for perusal. One file which was a master Diablo Canyon report file consisted of a group of documents from approximately 1967-1970. Dr. Hall indicated that these files had been consolidated six or seven years ago. These files only contained material that Drs. Hall and Newmark had done for the AEC.

Other files amounting to about one foot of shelf space dealing with Diablo Canyon work from 1974 to 1980 were also examined. Again they contained no indication that Dr. Newmark had performed any work for PG&E, but rather were correspondence reports and other documents revolving around their work for NRC. Finally, approximately 35 file drawers of Dr. Newmark and Dr. Hall were reviewed. Five of these files were for Diablo Canyon.



One of the interviewers looked through these drawers which only revealed NRC work or documents related to the proceeding which had been sent to Dr. Hall or Dr. Newmark.

William J. Hall 1/23/82
Dr. William J. Hall 1/23/82



Summary of Interview with Delbert E. McCulley

On January 23, 1982 James A. Fitzgerald and Trip Rothschild of the Office of the General Counsel interviewed Delbert E. McCulley in his offices in Urbana, Illinois. Mr. McCulley served as Administrator to N. M. Newmark & Associates from approximately 1954 to his death in 1981. In that capacity he served as Dr. Newmark's bookkeeper.

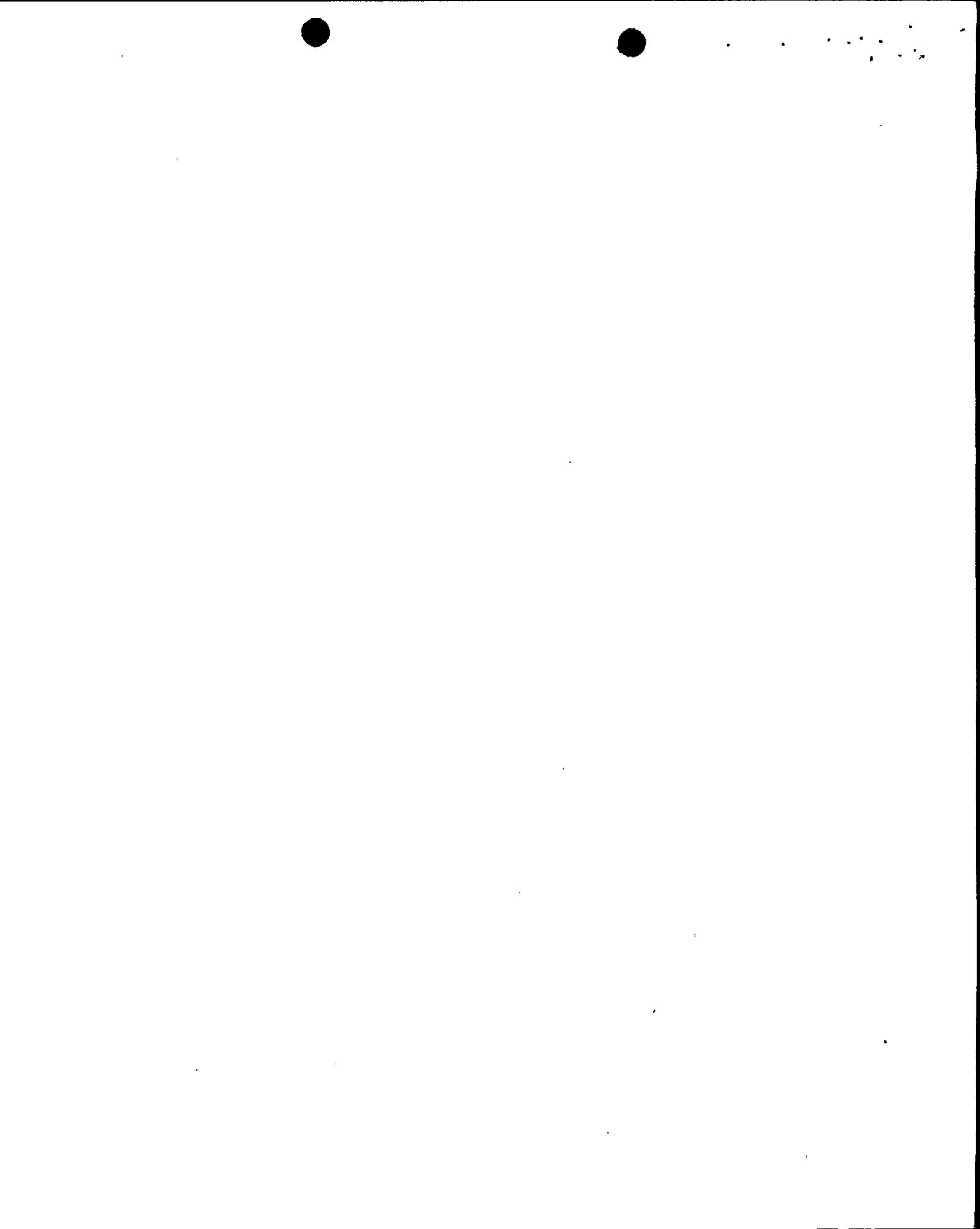
Mr. McCulley was advised of the purpose of the interview. Specifically he was advised that during Commissioner Gilinsky's visit of November 17, 1981 to the Offices of Robert L. Cloud and Associates, he observed a chart in the office of one of Dr. Cloud's associates which contained the name "Newmark". On the basis of the chart and a brief conversation with the associate, Commissioner Gilinsky gained the impression that Dr. Nathan Newmark might have been employed by PG& E to perform services related to Diablo Canyon. It was this matter that the Commission wanted to be explored further.

Mr. McCulley was told ^{TR} that a summary of his interview would be prepared and given to him for review and signature, that he could keep a copy, and that the summary might be made public in the near future.

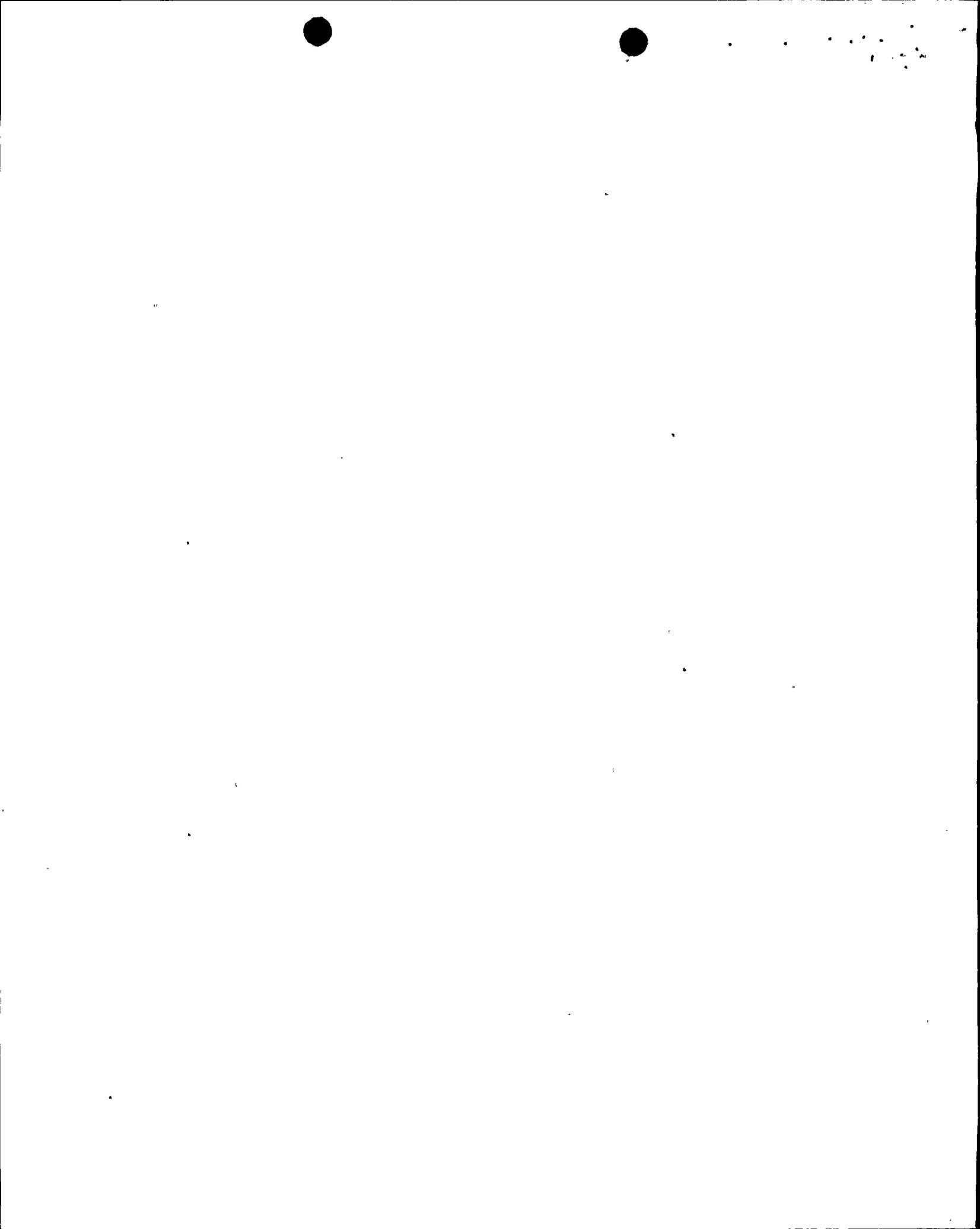
Mr. McCulley stated that ^{to be best of his knowledge - TA} during the period 1954-1981 Dr. Newmark never entered into a contract with PG& E and that Dr. Newmark never billed PG& E during this period. He stated that Dr. Newmark would not have worked for PG& E without compensation. He stated that the work that Dr. Newmark did relating to Diablo Canyon had been performed under contract with the AEC-NRC staff.

Delbert E. McCulley

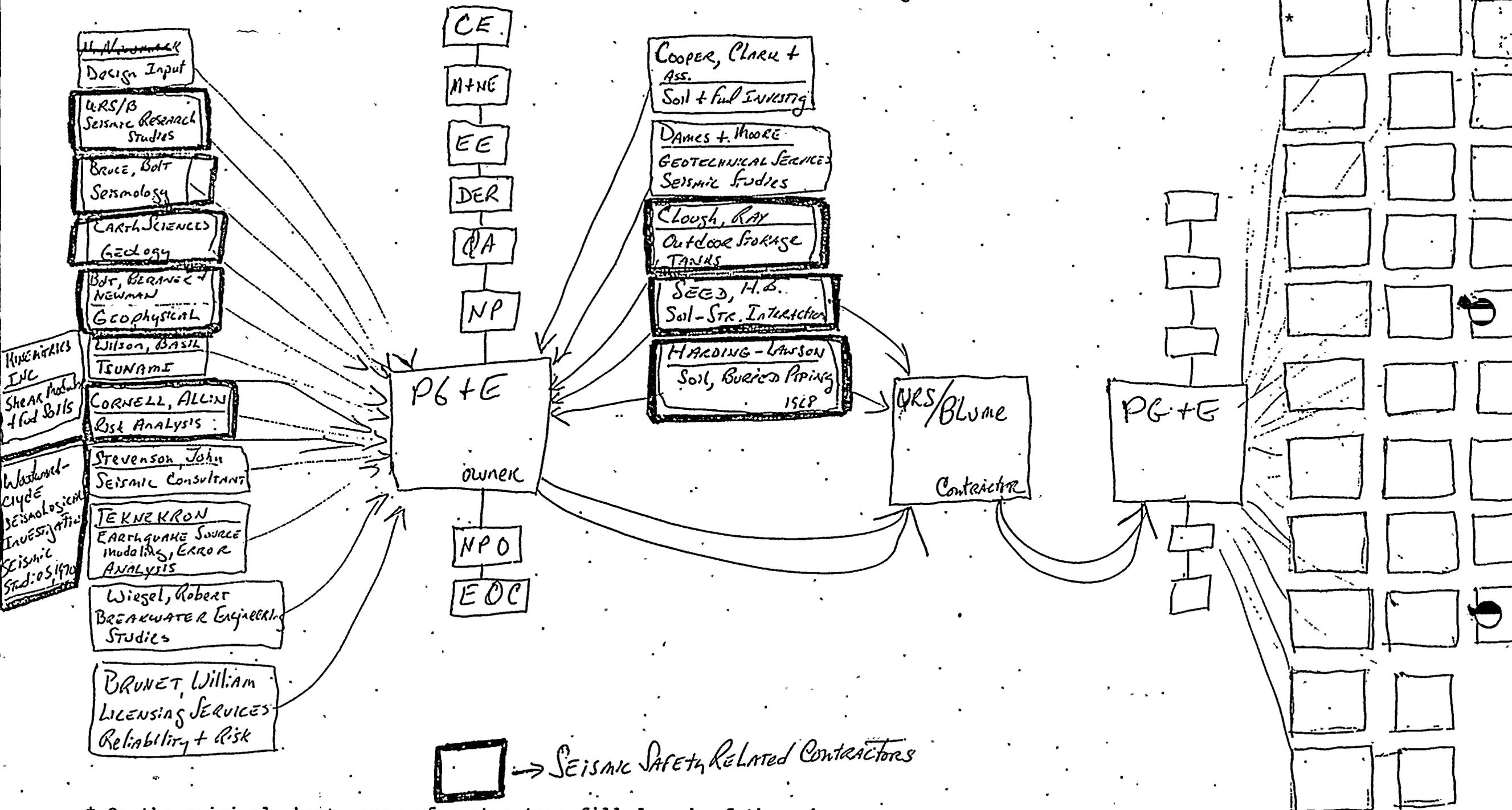
Delbert E. McCulley 1/23/82



ATTACHMENT 2

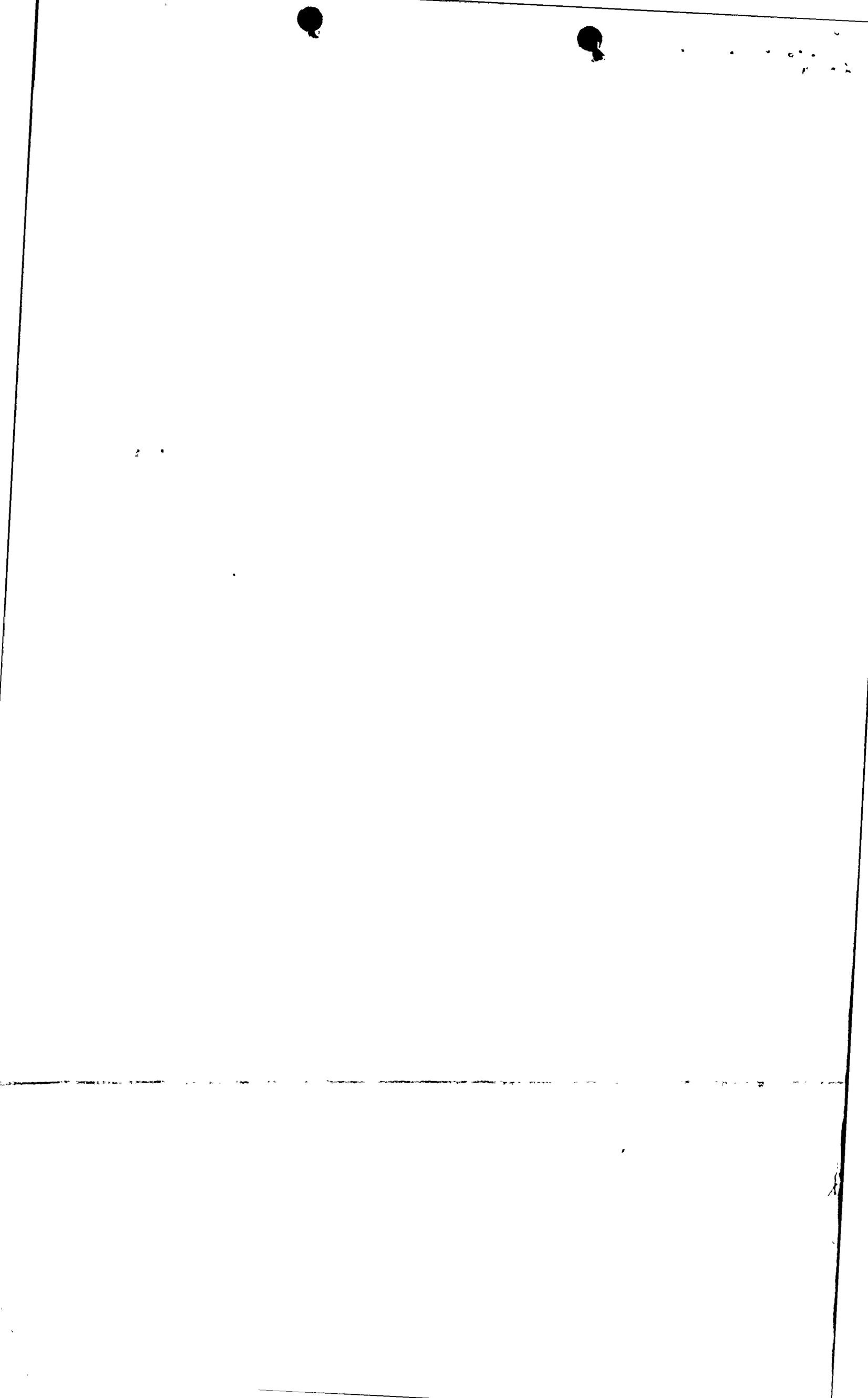


SEISMIC DESIGN CHAIN



* On the original chart names of contractors filled each of these boxes.

This is a detailed recreation of a portion of the chart in Dr. Pao Chen's office. PG&E's seismic safety contractors are heavily outlined. On the original chart the heavily outlined boxes were outlined in purple.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

PACIFIC GAS AND ELECTRIC COMPANY)

(Diablo Canyon, Units 1 and 2))

) Docket No.(s) 50-2750L
) 50-3230L

) (SEISMIC)
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)
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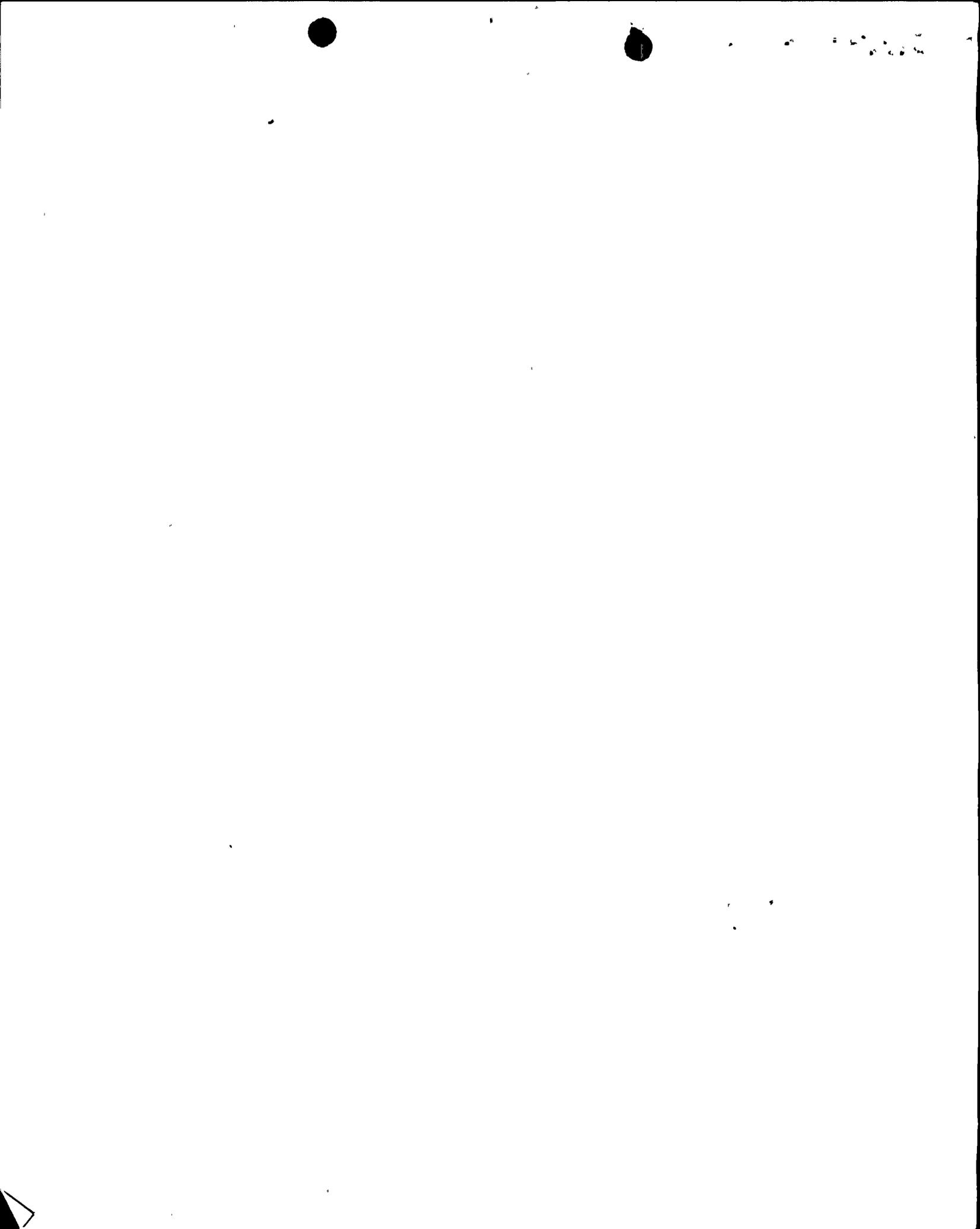
CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this

5th day of March 1982.

Regan K. Sawring
Office of the Secretary of the Commission



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
PACIFIC GAS AND ELECTRIC COMPANY) Docket No. (s) 50-275 OL
) 50-323 OL
(Diablo Canyon, Units 1 and 2))
)
) (SEISMIC)
)
)

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