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 FITZPATRICK, E. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele
 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Responds to GL 87-02, "Verification of Seismic Adequacy of Mechanical & Electrical Equipment in Operating Reactors, USI A-46" & forwards repts re resolution of USI A-46.

See Reports C

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January 30, 1996

AEP:NRC:1040C

Docket Nos.: 50-315
50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2
RESPONSE TO NRC GENERIC LETTER 87-02, "VERIFICATION OF
SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL EQUIPMENT
IN OPERATING REACTORS, UNRESOLVED SAFETY ISSUE (USI) A-46."

References

- 1) H. R. Denton to All Holders of Operating Licenses Not Reviewed to Current Licensing Criteria or Seismic Qualification of Equipment, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 (Generic Letter 87-02)," dated February 19, 1987.
- 2) J. G. Partlow to All Unresolved Safety Issue (USI) A-46 Plant Licensees Who Are Members of the Seismic Qualification Utility Group (SQUG), "Supplement No. 1 to Generic Letter (GL) 87-02 that Transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as corrected on February 14, 1992 (GIP-2)"
- 3) Generic Implementation Procedure, Rev. 2 (GIP-2), dated February 14, 1992, prepared by SQUG.
- 4) Letter from Indiana Michigan Power Company, AEP:NRC:1040A, dated September 21, 1992.
- 5) Letter from Indiana Michigan Power Company, AEP:NRC:1040B, dated April 1, 1993.
- 6) USNRC Safety Evaluation letter for Reference (4), dated December 23, 1992.

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Background

On February 19, 1987, the NRC issued Generic Letter 87-02, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46." The Generic Letter encouraged utilities to participate in a generic program to resolve the seismic verification issues associated with USI A-46. As a result, The Seismic Qualification Utility Group (SQUG) was formed, and the Generic Implementation Procedure (GIP) was developed for seismic verification of mechanical and electrical equipment in nuclear power plants. NRC review and approval of the GIP is documented in Generic Letter 87-02, Supplement No. 1, dated May 22, 1992, and includes the Supplemental Safety Evaluation Report No. 2 (SSER-2).

In our letter dated September 21, 1992, (Reference 4), Indiana Michigan Power Company committed to implement GIP-2 at Donald C. Cook Nuclear Plant including clarifications, interpretations and exceptions in SSER-2 (Reference 2).

The USI A-46 walkdowns for Cook Nuclear Plant Units 1 and 2 were completed during the 1993-1995 time period. Seismic verifications of the equipment performed under the SQUG-GIP criteria reflect the status of the equipment at the time of the walkdown. In accordance with the GIP, summary reports of the safe shutdown path selection, equipment selection, and results of the evaluation of the USI A-46 program have been developed and are being submitted with this letter. This submittal also includes proposed schedules to close out the outliers and open items identified during the program. We are revising the Cook Nuclear Plant licensing basis to include the SQUG-GIP SSER-2 methodology for verifying the seismic qualification of electrical and mechanical equipment as an alternative to the existing methodology.

USI A-46 Reports

As per our commitment to the GIP requirements, noted in Section 2.28 and Section 9 of the GIP, the following plant specific reports are being submitted:

- Attachment No. 1 - Safe Shutdown Equipment List (SSEL) Report
- Attachment No. 2 - Seismic Evaluation Report
- Attachment No. 3 - Relay Evaluation Report

This letter and its attachments constitute the document submittal requirements of GIP and GL 87-02.

ATTACHMENT NO. 1: SSEL REPORT

The SSEL report summarizes the efforts of the American Electric Power SQUG task group in identifying the four safe shutdown paths and the electrical and mechanical equipment associated with those paths. The use of the GIP-2 methodology resulted in selecting both safety related and non-safety related equipment to achieve a safe shutdown of the plant during a design basis earthquake (DBE). The scope of equipment is beyond that necessary to safely shut down the plant in the event of an earthquake as currently defined in the licensing basis for Cook Nuclear Plant.

The USI A-46 SSEL report also discusses the method of achieving safe shut down of the plant utilizing the SQUG qualified equipment.

ATTACHMENT NO. 2: SEISMIC EVALUATION REPORT

This report summarizes the results of the seismic walkdowns and verifications of the equipment specified in the SSEL, tanks, and heat exchangers, and also summarizes the cable tray/conduit evaluations. This report constitutes the summary report as required by GIP-2 Part 2, Section 9.4.

ATTACHMENT NO. 3: RELAY EVALUATION REPORT

This report summarizes the seismic verification for relays, including the circuit analysis, the capacity versus demand screening for the essential relays, and the corrective action for outliers. This report constitutes the summary report as required by GIP-2 Part 2, Section 9.3.

OUTLIERS AND SCHEDULE TO RESOLVE OUTLIERS

Outliers were identified during seismic walkdowns and evaluations of the SSEL equipment and during the relay evaluations. The SSEL outliers are identified in Attachment 2, Table 4-5 (Unit 1) and Table 4-6 (Unit 2). Outliers for the cable tray and conduit evaluations are identified in Section 6.5 of the same report. Also, Table 4-8 of the report identifies certain open items that were identified on a generic basis that fall in the category of general housekeeping or were of minor safety benefit. The outliers from the relay evaluations are identified in Section 7 of Attachment 3.

Some of the outliers have been resolved and modifications have been implemented at the plant. The low ruggedness relays identified in Appendix E of EPRI-7148 report have been replaced with seismically

rugged relays as per the recommendations of GIP-2. We are continuing to evaluate the unresolved outliers and will implement modifications if required.

We intend to close out all remaining outliers before the conclusion of the refueling outages following the next three operating cycles. For both units, this will be the refueling outages scheduled for the year 2000. As per the guidelines of GIP-2, we will submit a completion letter after all outliers/open items have been resolved.

SHUTDOWN PROCEDURES

It is our intention to bring the plant to a safe shutdown during an unlikely event of an earthquake (DBE) using the normal shutdown procedures. However, based on the guidelines noted in Section 5 of the SSEL report, we are developing a separate seismic shutdown procedure, which is scheduled for completion by April 1997. Validation of the procedure using the plant simulator and training of the operators will be completed by July 1997. This specific seismic shutdown procedure will also be utilized as an alternative means for safe plant shutdown.

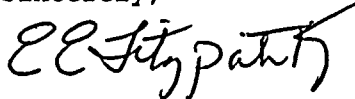
LICENSING BASIS MODIFICATION

The original seismic qualification of equipment at Cook Nuclear Plant was performed as per specification No. DCC-NE-101-QCN, which was based on the draft version of IEEE-344-1971 Standard. Subsequent to the NRC seismic qualification Review Team Audit, the seismic qualification (since May 1980) of new and replacement equipment at Cook Nuclear Plant has been performed as per the requirements of IEEE-344-1975 Standard, unless exempted as per specification DCC-NS-103-QCN.

In response to the NRC's SER (Reference 6), we are informing you that we intend to incorporate the USI A-46 methodology (as documented in GIP-2 and NRC SSER-2) as one of the options, along with IEEE-344-1975 methodology, for verifying the seismic adequacy of electrical and mechanical equipment prior to issuance of the plant specific SER. This modification to the licensing basis will not change the original licensing basis of the non-SQUG equipment. We also intend to apply the USI A-46 methodology to future verification of seismic qualification of the repair/replacement of equipment including the scope of equipment identified as part of Regulatory Guide 1.97. The SQUG-GIP is an acceptable alternative for seismic evaluations of equipment. The seismic evaluations will be performed in a controlled and systematic manner to ensure that the new and replacement items are properly represented in the

earthquake experience database and the applicable caveats for each class of equipment are met. The adoption of A-46 methodology will be documented in our annual update to the USFAR pursuant to 10 CFR 50.59 and will be made available for future modifications and for new and replacement equipment as described in GIP-2, Part 1, Section 2.3.4.

Sincerely,



E. E. Fitzpatrick

E. E. Fitzpatrick
Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 30th DAY OF January 1996



Notary Public

My Commission Expires: 6-22-99

eh

Attachments

cc: A. A. Blind
G. Charnoff
H. J. Miller
NFEM Section Chief
NRC Resident Inspector - Bridgman
J. R. Padgett



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DONALD C. COOK NUCLEAR PLANT

**UNRESOLVED SAFETY ISSUE A-46
SAFE SHUTDOWN EQUIPMENT LIST REPORT**

AEP:NRC:1040C - ATTACHMENT 1

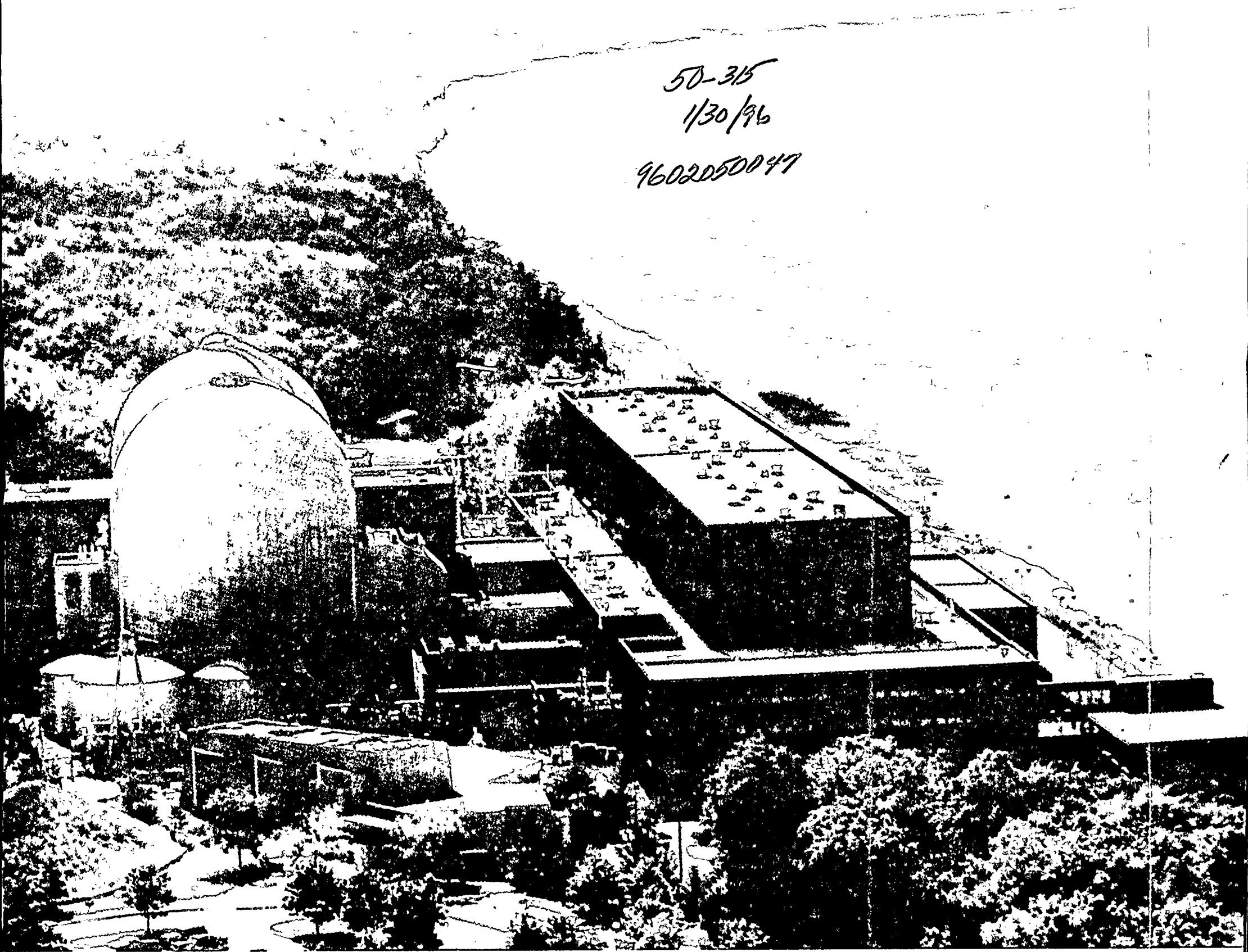


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DONALD C. COOK NUCLEAR PLANT

UNRESOLVED SAFETY ISSUE A-46
SEISMIC EVALUATION REPORT

AEP:NRC:1040C - ATTACHMENT 2

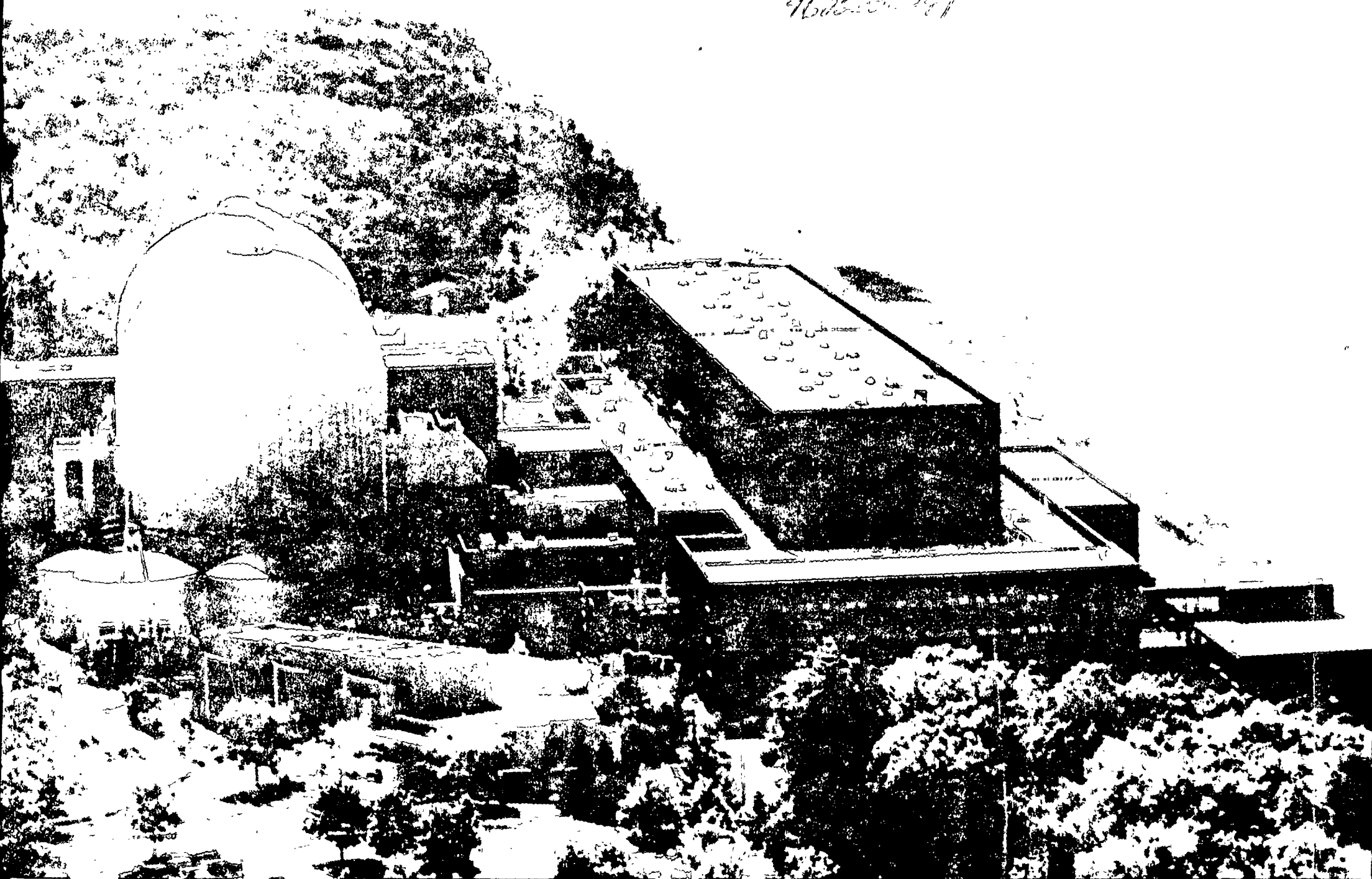


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**UNRESOLVED SAFETY ISSUE A-46
RELAY EVALUATION REPORT**

AEP:NRC:1040C - ATTACHMENT 3



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