SAXTON NUCLEAR EXPERIMENTAL CORPORATION
GENERAL PUBLIC UTILITIES SYSTEM

Jersey Central Power & Light
General Public Utilities Nuclear Corporation
Metropolitan Edison Company
Pennsylvania Electric Company

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July 27, 1995
C301-95-2019
6575-952-501

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

Gentlemen,

Subject: Saxton Nuclear Experimental Corporation
Operating License No. DPR-4
Docket No. 50-146
Response to the Request for Additional Information
Regarding the 15 Day Report Describing the Inadvertent
Breach of the SNEF Containment Vessel Liner

The purpose of this letter is to submit the responses to the Request for Additional Information (RAI) regarding the subject 15 Day Report and status activities associated with installation of a permanent plug or seal.

Enclosed are the requested root cause/human performance evaluation results, a discussion pertaining to corrective actions and their status, and clarification of issues identified in your June 27, 1995 letter.

The 15 Day Report committed to the completion of a design for and installation of a permanent plug or seal by July 31, 1995. Although the design effort has been completed, installation of the permanent plug or seal will be delayed due to equipment, personnel and material availability until the fourth quarter 1995. The delay is considered acceptable since the temporary plug has been observed to adequately prevent ground water intrusion since its installation.

Sincerely,

G. A. Kuehn
Vice President SNEC

WGH
Attachments

cc: Administrator, Region I
NRC Senior Project Manager NR
NRC Project Scientist, Region I

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Response to the Request for Additional Information
Regarding the 15 Day Report on the Inadvertent Breach
of the SNEF Containment Vessel Liner

Item 1 In conversation with your staff they indicated that investigations related to the root cause of the event and human performance were still ongoing when your 15 day report was submitted. Please submit a copy of the results of these investigations when they are complete, and the additional corrective actions that will be taken, if any, as a result of the findings.

Response to Item 1 - Enclosed, as requested, is a copy of the GPUN Human Performance Enhancement System (HPES) Report concerning the inadvertent penetration of the Saxton containment vessel liner during site characterization activities. This report contains the results of the root cause and human performance investigations.

A second question asks what additional corrective actions will be taken, if any, as a result of the findings of the investigation. The following items describe completed actions and those which remain to be done:

1. All personnel involved with the subject activities have reviewed the HPES report and the findings.

2. The core bore work instruction was revised to include "lessons learned" from the event review and it underwent additional independent technical review.

3. Information will be disseminated on the need to field verify Saxton drawings before use.

4. A walk down of all remaining core bore locations was performed by an independent technical reviewer, the manager of decommissioning projects and a member of the Independent On-site Safety Review Group, who wrote the HPES report. This walkdown verified that the remaining core bores would not challenge the containment liner integrity.

5. The remaining core bores to be taken in containment exterior walls/ containment vessel floor were verified to be shallow (<6"), and are not in any location were the concrete depth is less than approximately 18".

6. Plugging materials are on-site to stop a ground water intrusion should a liner penetration occur.

7. The event and the "lessons learned" will be reviewed as a topic in an upcoming session of engineering support personnel (ESP) training.

8. The Saxton procedure process was reviewed and is being revised. The revision will improve the review process and more clearly define reviewer responsibilities and assignments.

Item 2 Section V of your report discusses the cause of the event. Please provide additional detail on the processes that resulted in an inadequate design review of the design drawings and the process that allowed the failure to verify the adequacy of the depth of the concrete to persist through the internal reviews of the Characterization Plan by GPUN. Please describe changes to prevent these problems from being repeated. During an inspection at the Saxton facility on June 1 and 2, 1995, it was stated that drawing D-37794 was used to plan the boring. This drawing indicated that the concrete was 30 inches thick in the sump area of the ere the boring took place. Is this drawing in error or was the drawing misread or misused to determine the depth of the concrete in the rod room? Your 15 day report does not discuss the accuracy of the drawings used. Please address this issue.

Response to Item 2 - The following additional detail is being provided as requested on the process that resulted in an inadequate review of the design drawings and the process that allowed the failure to persist through the internal reviews of the Characterization Plan by GPUN.

The internal review of the plan failed to detect the potential for liner penetration when core boring at this location to 18" for different reasons on the part of each reviewer, this is described in considerable detail in the HPES report and the minutes of the critique held after the event, those minutes are included as attachments 2 and 3 of this submittal.

The reasons for that failure are as follows:

1. An inappropriate drawing was used by the plan originator and some of the reviewers (drawing #D-37794). This drawing shows the area in question (rod room sump), and appears to indicate adequate concrete depth in this area for an 18" core. However, the view shown of the sump is out of plane on this drawing and as such does not represent the actual location. This fact is not obvious and requires interpolation of the drawing.

2. The responsible technical reviewer of the plan did not conduct a review outside his specific area of expertise and did not seek assistance for technical review of areas such as core bore activities which were outside his area of expertise as required.

3. When the work instruction was developed to implement the Characterization plan, a different drawing (D-37757) was used to check the core bore locations. This drawing accurately shows the area in question (rod room sump), however, in transposing the measurement of the drill location from the plan view to the sectional view of the drawing, the reviewer erred and located the planned bore site closer to the containment center line than the actual core bore location. Because the containment bottom is sloped, this resulted in the appearance of adequate concrete depth at this location. The estimated depth determined by this reviewer, using drawing D-37757, closely matched the depth determined in the first review using drawing D-37794. As a result, good correlation was achieved using separate drawings by different reviewers, however, different errors made by each reviewer resulted in a failure to detect the inadequate concrete depth at the core bore location.

Drawing D-37794 does not reflect the true location of the sump and will not be used for planning activities. Drawing D-37757 is accurate but was misread. The errors in applying these drawings and the failure to obtain cross disciplinary independent technical review of the Characterization plan with-in GPUN will be corrected to prevent recurrence as described in the response to question 1.

Item 3 Your report discussed corrective actions planned in Section VII. Please discuss the results of the planned reviews described in Subsection A.

Response to Item 3 - The results of the three planned reviews delineated in section VII.A. of the 15 day report are as follows:

1. As described in the question 1 response, a review of the procedure process governing the technical review of the work instruction was conducted. It revealed the need for revisions to strengthen the independent technical review process and to more clearly define reviewer and approver assignments and responsibilities. Those revisions are in progress.

2. The use of drawings was reviewed and showed that drawing D-37794, and other general view drawings like it are inappropriate for use as a detailed planning reference. Drawing D-37757, a construction detail drawing, is accurate and may be used. As mentioned in the response to question 1, the need to field verify drawings was reiterated to personnel and will be covered in the ESP training.

3. Additional reviews and walkdowns of the remaining core bore locations as described in the question 1 response were conducted. These verified that the remaining core bore locations and work process will not challenge the containment liner or its integrity.