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SUBJECT: Responds to NRC 930903 request to provide response to unresolved item 305/92006-03 re containment penetration leaks.

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NRC-93-148

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October 11, 1993

U.S. Nuclear Regulatory Commission
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Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Response to Inspection Report 93-015

Reference: Letter from G.C. Wright (NRC) to C.A. Schrock (WPSC) dated August 3, 1993
(Inspection Report 93-015)

In the reference, the Nuclear Regulator Commission (NRC) requested that Wisconsin Public Service Corporation (WPSC) provide a written response to unresolved item 305/92006-03. The report requested that this response include our evaluation of the maximum containment penetration leak rates for the electrical penetrations discussed in Paragraph 2.c and a commitment to revise leak rate test procedure SP 56A-090 to account for the assumed leak rate. Attachment 1 to this letter provides WPSC's response and commitment.

In paragraph 2.a of the reference, WPSC's actions in response to open item 92006-01 from the original Electrical Distribution System Functional Inspection (EDSFI) were identified as weak. Attachment 2 provides additional information on this issue.

If you have any questions concerning these issues, please contact me or a member of my staff.

Sincerely,

Charles A. Schrock
Charles A. Schrock
Manager - Nuclear Engineering

DLR/cjt

Attach.

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PDR ADDCK 05000305
P PDR

cc - US NRC, Region III
US NRC Senior Resident Inspector

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ATTACHMENT 1

to

Letter From C.A. Schrock (WPSC)

to

Document Control Desk (NRC)

Dated: October 11, 1993

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October 11, 1993
Attachment 1, Page 1

NRC Inspection Report 305/93015 item 2c:
(Open) Unresolved Item (305/92006-03(DRS))

The EDSFI team noted that the licensee's design documents did not contain information that demonstrated the thermal capabilities and limits of the containment electrical penetrations.

To resolve this issue, the licensee produced the required documentation regarding thermal capabilities and limits of the containment electrical penetrations. The inspectors noted that calculations pertaining to electrical coordination for Containment Dome Vent Fans A/B and motor valves SI 20 A/B showed that the calculated glass softening lines, which represent the point at which a breach in containment integrity could result, lie within the circuit breaker trip curves. This could result in a breach of containment penetration under certain fault conditions before the breaker trips. However, the licensee considered the likelihood of such a fault to be remote.

At the inspectors' request, the licensee performed further calculations to show that if a breach in containment integrity did occur, the maximum leak rate would not exceed the design basis leak rate nor the technical specification leak rate. In addition, the licensee committed to revise SP 56A-090, "Containment Local Leak Rate Type B and C Test" to account for the assumed "electrical penetration fault" leak rate. This item is considered open pending the licensee's submittal of an analysis of the containment penetration maximum leak rate and a commitment to revise SP 56A-090.

WPSC's Response

The evaluation of the maximum containment penetration leak rate for the electrical penetrations was documented in Appendix E of Calculation C10016. This evaluation concludes "The calculated leakage rate through the penetration is considerably less than the maximum allowable leakage rate from containment."

Currently, WPSC plans to replace overcurrent protective devices in the circuits where a portion of the penetration overload line extends within the magnetic trip region of the breaker trip curve. The replacement circuit breakers will eliminate the overlap of the penetration overload line and breaker trip curve and provide coordination between each type of electrical penetration assembly and its respective protective device. These circuit breakers will be installed during the 1994 outage. Once all of the affected circuit breakers are replaced, the calculated leak rates of electrical penetration faults found in calculation C10016, Appendix E will no longer apply.

If all affected breakers cannot be replaced prior to the startup after the 1994 refueling outage, WPSC will revise the acceptance criteria of the leak rate test procedure, SP 56A-090, "Containment Local Leak Rate Type B and C Test." If it is necessary to revise the procedure, the current acceptance criteria will be augmented by the following:

1. The local leak rate test (LLRT) as-found minimum pathway leakage when summed with the hypothetical "electrical penetration fault" leakage will be required to be below the plant's maximum allowable (design) leakage rate (L_a).
2. The LLRT as-left maximum pathway leakage when summed with the hypothetical "electrical penetration fault" leakage will be below the current technical specification acceptance criteria of $0.6 L_a$ for Type B and C tests.

ATTACHMENT 2

to

Letter From C.A. Schrock (WPSC)

to

Document Control Desk (NRC)

Dated: October 11, 1993

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Attachment 2, Page 1

NRC Inspection Report 305/93015 item 2a (partial):
(Closed) Open Item (305/92006-01(DRS))

During the review of calculations C-038-007 and C-038-008, the inspectors identified the following:

- There was no documented basis for the 12.3kA interrupting rating for Bussmann KTK-R fuses indicated in section 4.2 of the calculations. This interrupt rating was necessary to accommodate the calculated short circuit current. The inspectors questioned the acceptability of these fuses which are normally rated for 10kA at 300Vdc and had not been specifically tested at 12.3kA, 138Vdc.
- The one-line fuse time-current coordination curves for distribution cabinet BRB-102 did not include plots for the KTK-R and KWN-R fuses.

Following discussions with the vendor and further engineering review, the licensee determined that the fuses were acceptable for their applications. However, the licensee committed to the following actions:

- Update calculations C-038-007 and C-038-008 to include an analysis of fuse coordination with the main bus fuses.
- Update one-line diagrams in calculations C-038-007 and C-038-008 to show the KTK-R and KWN-R fuses and the shunt connected to KTK-R.
- Add a statement to the calculations to identify the acceptability of the KTK-R fuse interrupting rating of 10kA, 300Vdc, for available fault current of 12.3kA at 138Vdc.

The inspectors considered the licensee's initial follow-up of this item to be weak. However, in response to the NRC inquiry, the licensee took prompt actions to address this issue. This item is considered closed.

WPSC's Response

Wisconsin Public Service Corporation does not concur with the inspector's conclusion that the initial follow-up to item 2a was weak.

The proposed revisions to calculations C-038-007 and C-038-008 were agreed upon by WPSC and the NRC inspectors during the original EDSFI. During the follow-up EDSFI, the inspectors involved felt that more detailed information was required to adequately address this issue. Therefore, in response

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to the follow-up inspectors requests, additional discussions with the vendor and further engineering reviews were performed. The commitments listed above were made during discussions with the follow-up EDSFI inspectors to resolve their specific concerns.

WPSC feels that the information developed in response to the follow-up inspector's inquiries, including further discussions with the vendor and engineering reviews, provides better documentation of the issue but does not improve the technical basis of the calculations. Since the calculations were accepted by WPSC and during the original EDSFI by the NRC, no further actions were taken on this issue until the follow-up inspector's requests. Therefore, we disagree with the inspector's position that the WPSC EDSFI follow-up actions to item 2a were weak.