

May 6, 1996

Mr. Roger O. Anderson, Director  
Licensing and Management Issues  
Northern States Power Company  
414 Nicollet Mall  
Minneapolis, Minnesota 55401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - PRAIRIE ISLAND GENERATING  
PLANT, UNIT 1 (TAC NO. M94486)

In its letter dated March 25, 1996, Commonwealth Edison Company (ComEd or the licensee), forwarded its operability assessment and Technical Report, CEN-628-P, Revision 0, pertaining to ABB Combustion Engineering Nuclear Operations (ABB/CENO) steam generator tube sleeves for Zion Nuclear Power Station, Units 1 and 2. This was followed up with a meeting that involved Wisconsin Public Service Corporation, Entergy Operations, Northern States Power Corporation, Commonwealth Edison Company, and ABB/CENO on March 28, 1996, in which the sleeves were discussed. The staff has reviewed the data from the March 25, 1996, letter and the meeting presentation and concluded that additional information is required to complete its review of Prairie Island's ABB/CENO sleeves. Enclosed is the request for additional information (RAI).

Sincerely,

Original Signed By: L. Tran  
Beth Wetzel, Project Manager  
Project Directorate III-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-282

Enclosure: RAI

cc w/encl: See next page

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*Handwritten initials/signature*

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in cursive script, appearing to read "Beth Wetzel".

Beth Wetzel, Project Manager  
Project Directorate III-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-282

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Mr. Roger O. Anderson, Director  
Northern States Power Company

Prairie Island Nuclear Generating  
Plant

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## REQUEST FOR ADDITIONAL INFORMATION

1. What are the process control feedback criteria that are used to determine the circumstances under which a visual inspection (VT-1), will be performed? (Section 8.3.1.1 of CEN-628-P, Revision 0, indicates that a VT-1 inspection is not always performed.)
2. If one ultrasonic testing (UT) pass over a weld indicates complete fusion for the width of the UT pickup, it is considered an acceptable weld. Based on this acceptance criterion, discuss the basis for leaving indications in service given that the continuous fusion could be above and/or below the weld centerline.

Given that the different techniques (visual inspection, ultrasonic testing, eddy current testing (ECT)) are complementary rather than supplementary, discuss the ability to align the VT, UT, and ECT results (i.e., if ECT detects an indication, how is it known whether this indication is above or below the continuous fusion path given that the continuous fusion path may be above or below the weld centerline). Provide supporting metallurgical data.

3. The UT field data analysis missed several unbonded regions (e.g., inclusions) in the Prairie Island pulled tubes. This observation required further modifications to the UT screening criteria (i.e., the voltage thresholds were adjusted and the types of scans analyzed were modified). Given these modifications, discuss the basis for not repeating the review of all previously obtained UT data to ensure the tubes have adequate bonding. Given that different types of scans may be needed to detect such unbonded regions (e.g., inclusions), discuss the basis for not reperforming the baseline UT examination for all inservice sleeves.

It was noted in Section 8.3.1.4 of CEN-628-P, Revision 0, that historical UT and ET techniques were capable of detecting all rejectable welds (16 of 16). If this is the case, discuss why the unbonded regions of several tubes were missed at Prairie Island. Discuss the possibility that the sensitivity of the analysts was heightened as a result of recent industry experience thereby resulting in the detection of these defects. Given that recent industry experience may have potentially heightened the analysts' sensitivity, discuss the need for reanalyzing all historic ECT and UT data.

4. Clarify figure 8.3.1.3.A of CEN-628-P, Revision 0. If this flow chart had been used, all volumetric indications should have been removed from service.

Enclosure

5. Discuss the qualification data supporting the use of the magnetic bias plus point in dispositioning signals obtained with the non-magnetically biased plus point.
6. Discuss the nature of the two rejectable welds missed during UT examination (Section 8.3.1.4 of CEN-628-P, Revision 0). Discuss the nature of the two rejectable welds missed during ET examination (Section 8.3.1.4 of CEN-628-P, Revision 0). Discuss any conclusions which can be drawn with respect to the capability and/or limitations of the two non-destructive examination methods based on these results (i.e., the types of defects that can be detected and/or missed).
7. In several plant assessments, a comparison is made to the indications at Prairie Island. This comparison is made with respect to both voltage and arc length. Discuss the sizing accuracy of the NDE techniques. If the sizing accuracy is limited, discuss the limitations of this comparison. Provide the supporting technical justification for the responses.

It was indicated that work is on-going with respect to using voltage to assess certain forms of weld degradation. In the plant's assessments, discuss if voltage was used at all to assess the severity of degradation. If it was, discuss how voltage is related to the severity of the degradation for all forms of degradation for which voltage was used to assess the severity of the degradation.

8. Some tubes that were originally characterized as having no detectable degradation (NDD) were reevaluated as having volumetric indications. Discuss whether the data for all the NDD tubes were reevaluated in this analysis or just this one tube. If only a limited sample was reevaluated, discuss the basis for not expanding the reevaluation given the possibility that larger undetected defects could exist.
9. Some tubes had noisy C scan displays. Discuss the limits that are placed on the amount of noise in the data.
10. Since the root cause of these indications has been attributed to the cleaning process, additional weld indications would not be expected. As a result, a reporting requirement to notify the staff when indications are detected in newly installed sleeves in the weld area would seem appropriate. Such indications may indicate a breakdown in the sleeving process. Discuss the appropriateness of such a reporting requirement.