



Northern States Power Company

Prairie Island Nuclear Generating Plant

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February 7, 1995

U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Response to Request for Information on the
January 9, 1995 License Amendment Request on
Incorporation of F* and L* Steam Generator Tube Repair Criteria

During a January 27, 1995 telephone call between the NRC and NSP, the NRC Staff asked several questions related to our License Amendment Request dated January 9, 1995 which proposed the incorporation of F* and L* Steam Generator Tube Repair Criteria into the Prairie Island Technical Specifications. The attached information is being provided in response to some of the questions provided during that call. The remaining questions are still being evaluated, and responses to those questions will be provided as soon as possible.

In this letter we have made new Nuclear Regulatory Commission commitments which are identified as such in the attachment as the statements which are in *italics*.

Please contact Gene Eckholt (612-388-1121, Ext. 4663) if you have any questions related to the attached responses.

Eugene Eckholt for

Roger O Anderson
Director
Licensing and Management Issues

c: Regional Administrator - Region III, NRC
Senior Resident Inspector, NRC
NRR Project Manager, NRC
J E Silberg

Attachment: Response to NRC Request For Additional Information Related to
January 9, 1995 F* and L* Steam Generator Repair License Amendment
Request

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Response to NRC Request For Additional Information
Related to January 9, 1995 F* and L* Steam Generator Repair
License Amendment Request

The following information is provided in response to a request for additional information received from the NRC Staff during a telephone conference call between NSP, NRC, and Westinghouse on January 27, 1995 related to the Prairie Island License Amendment Request for the F*/L* steam generator repair criteria:

Question 1: Discuss the effects of tube support plate lockup on F*.

Answer: The tensile stress at cold shutdown in a tube locked at the tube support plate (a process that occurs during power operation) is maximum in tubes near stay rods and has been determined to be about 300 psi in the cold condition. This is much lower than the design value of 2800 psi for the hard rolled F* expansion region. In addition during the rerolling process there is a slight lengthening of the tube which will reduce the tensile stress slightly. A Westinghouse letter to NSP is being prepared to document this reasoning and will be forwarded to the NRC when received by NSP (expected by Mid-February).

Question 2: How will Prairie Island implement the additional roll expansion?

Answer: Prairie Island will implement additional roll expansion through the normal plant modification process. The precedent for this was established by Connecticut Yankee wherein the application of additional roll expansion was implemented using the 10 CFR 50.59 process with no prior NRC approval. NSP will provide the NRC a copy of the Combustion Engineering Qualification Report for the Additional Roll Expansion process. This report is expected to be received by NSP by late February 1995 and will be submitted to the NRC following receipt.

Question 3: Is sludge included in the additional roll expansion qualification testing?

Answer: During the qualification development for the additional roll expansion by Combustion Engineering, sludge from Zion Station was used to simulate possible sludge conditions between the tube and tubesheet hole. Consideration is being given to conducting some testing with Prairie Island hard scale which was removed in the past by high pressure sludge lancing, but this testing will not be done in time for the Qualification Report now being written. The Combustion Engineering Qualification Report will be evaluated against the criteria established in Westinghouse WCAP-14225.

Question 4: Discuss if and how the tube finish and tubesheet bore hole finish (surface roughness) were addressed during the qualification process for the additional roll expansion.

Answer: Westinghouse has stated that their testing matched the original tubesheet bore hole finish requirement of 250 RMS plus or minus 10%. The answer for the Combustion Engineering additional roll expansion process is not yet available. This information will be included in the Combustion Engineering qualification report to be submitted to the NRC following its receipt by NSP.

Question 5: Discuss the effect of boric acid on the F* Criteria.

Answer: The effect of boric acid leakage into the region between the tube hard roll and the tubesheet bore hole is discussed in Section 2.5 of WCAP-14225. This discussion comes to the conclusion that boric acid leakage has no adverse effect on the F* parameters.

Question 6: How does NSP define tube degradation for F*?

Answer: Tube degradation for F* will be defined as no detectable degradation in the F* region using the Rotating Pancake Coil for the first two steam generator inspections which use the F* criteria. During initial installation of additional roll expansions, the MRPC probe will be used both prior to the installation and after the installation to be able to best evaluate the condition of the tube in the F* region. NSP will perform this examination, looking at all F* tubes, new and old, for the first two outages following the use of the F* criteria. Other eddy current techniques will be evaluated at a later time.

Question 7: Will inspection techniques be qualified for the L* criteria?

Answer: Qualification of the inspection techniques for determining L* tubes will be conducted prior to implementation. Implementation of L* is not planned for the May 1995 outage. It is expected that qualification will follow the guidance of Appendix H of the EPRI PWR Inspection Guidelines.

Question 8: What are the ramifications of having more than one alternate repair criteria that allow leakage, such as the L* criteria.

Answer: When more than one Alternate Repair Criterion are used, the summation of leakage from all tubes left in service by those repair criteria must be less than the allowable leakage for the most limiting of those Alternate Repair Criteria.