

Exhibit B

Prairie Island Nuclear Generating Plant

License Amendment Request Dated November 27, 1996

Proposed Changes Marked Up On Existing Technical Specification Pages

Exhibit B consists of existing Technical Specification pages with the proposed changes highlighted on those pages. The pages affected by this License Amendment Request are listed below:

TS.4.12-4

B.4.12-2

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D. Acceptance Criteria

1. As used in this Specification:

- (a) Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.
- (b) Degradation means a service-induced cracking, wastage wear or general corrosion occurring on either inside or outside of a tube.
- (c) Degraded Tube means a tube containing imperfections $\geq 20\%$ of the nominal wall thickness caused by degradation.
- (d) % Degradation means the percentage of the tube wall thickness affected or removed by degradation.
- (e) Defect means an imperfection depth at or beyond exceeds the repair limit. A tube containing a defect is defective.
- (f) Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging or repaired by sleeving because it may become unserviceable prior to the next inspection and is equal to 50% of the nominal tube wall thickness. If significant general tube thinning occurs, this criteria will be reduced to 40% wall penetration. This definition does not apply to the portion of the tube in the tubesheet below the F* distance provided the tube is not degraded (i.e., no indications of cracks) within the F* distance for F* tubes. The repair limit for the pressure boundary region of any sleeve is 40% of the nominal sleeve wall thickness.
- (g) Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break.
- (h) Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.
- (i) Sleeving means that tube sleeving is permitted only in areas where the sleeve spans the tubesheet area and whose lower joint is at the primary fluid tubesheet face is the repair of degraded tube regions using a new Alloy 690 tubing sleeve inserted inside the parent tube and sealed at each end by welding or by replacing the lower weld in a full depth tubesheet sleeve with a hard rolled joint. The new sleeve becomes the pressure boundary spanning the original degraded tube region.
- (j) F* Distance is the distance from the bottom of the hardroll transition toward the bottom of the tubesheet that has been conservatively determined to be 1.07 inches (not including eddy current uncertainty).
- (k) F* Tube is a tube with degradation, below the F* distance, equal to or greater than 40%, and not degraded (i.e., no indications or cracking) within the F* distance.

4.12 STEAM GENERATOR TUBE SURVEILLANCE

Bases continued

plants have demonstrated the capability to reliably detect wastage type defects that have penetrated 20% of the original 0.050-inch wall thickness (Reference 2).

Plugging or sleeving is not required for tubes meeting the F* criteria.

The F* distance will be controlled by a combination of eddy current inspection and/or process control. For a new additional roll expansion, the requirement will be at least 1.2 inches of new hard roll. This is controlled by the length of the rollers (1.25 inch effective length). The distance from the original roll transition zone is also controlled by the process in that the lower end of the new roll expansion is located one inch above the original roll expansion. In the case of the new roll, eddy current examination will confirm there are no indications in the new roll region and that there is a new roll region with well defined upper and lower expansion transitions.

When eddy current examination, alone, must determine the F* distance, such as in the existing hard roll region, or when multiple lengths of additional hard rolls have been added, the eddy current uncertainty is qualified by testing against known standards. That value is expected to be 0.18 inches. Therefore, the F* distance measured by eddy current (sum of 1.07 and 0.18) will be conservatively set at 1.3 inches.

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

Whenever the results of any steam generator tubing in-service inspection fall into Category C-3, these results will be promptly reported to the Commission prior to resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

Degraded steam generator tubes may be repaired by the installation of sleeves which span the section of degraded steam generator tubing. A steam generator tube with a sleeve installed meets the structural requirements of tubes which are not degraded.

The following sleeve designs have been found acceptable by the NRC Staff:

- a. Westinghouse Mechanical Sleeves (WCAP 10757)
- b. Westinghouse Brazed Sleeves (WCAP-10820)
- c. Combustion Engineering Leak Tight Sleeves (~~CEN-294-P~~) (CEN-294-P, for sleeves installed prior to January 1, 1997)
- d. Combustion Engineering Leak Tight Sleeves (CEN-629-P, for sleeves installed after January 1, 1997)

Exhibit C

Prairie Island Nuclear Generating Plant

License Amendment Request Dated November 27, 1996

Revised Technical Specification Pages

Exhibit C consists of revised pages for the Prairie Island Nuclear Generating Plant Technical Specifications with the proposed changes incorporated. The revised pages are listed below:

TS.4.12-4

B.4.12-2

D. Acceptance Criteria

1. As used in this Specification:

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- (f) Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging or repaired by sleeving because it may become unserviceable prior to the next inspection and is equal to 50% of the nominal tube wall thickness. If significant general tube thinning occurs, this criteria will be reduced to 40% wall penetration. This definition does not apply to the portion of the tube in the tubesheet below the F* distance provided the tube is not degraded (i.e., no indications of cracks) within the F* distance for F* tubes. The repair limit for the pressure boundary region of any sleeve is 40% of the nominal sleeve wall thickness.
- (g) Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break.
- (h) Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.
- (i) Sleeving is the repair of degraded tube regions using a new Alloy 690 tubing sleeve inserted inside the parent tube and sealed at each end by welding or by replacing the lower weld in a full depth tubesheet sleeve with a hard rolled joint. The new sleeve becomes the pressure boundary spanning the original degraded tube region.
- (j) F* Distance is the distance from the bottom of the hardroll transition toward the bottom of the tubesheet that has been conservatively determined to be 1.07 inches (not including eddy current uncertainty).
- (k) F* Tube is a tube with degradation, below the F* distance, equal to or greater than 40%, and not degraded (i.e., no indications or cracking) within the F* distance.