ATTACHMENT 1

Marked-up St. Lucie Unit 1 Technical Specifications

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REACTOR COOLANT SYSTEM

STEAM GENERATORS

LIMITING CONDITION FOR OPERATION

3.4.5 Each steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more steam generators inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing T_{avg} above 200°F.

SURVEILLANCE REQUIREMENTS

4.4.5.1 Steam Generator Sample Selection and Inspection - Each steam generator shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table 4.4-1.

4.4.5.2 Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 4.4-2. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 4.4.5.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 4.4.5.4. Steam generator tubes shall be examined in accordance with Appendix IV of the ASME Boiler and Pressure Vessel Code - Section XI - "Inservice Inspection of Nuclear Power Plant Components" 1974 Edition and Addenda through Summer 1976. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.

b. The first inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

1. All ~~nonplugged~~ tubes that previously had detectable wall penetrations (>20%), ~~and~~

3 → 2. Tubes in those areas where experience has indicated potential problems.

2. All sleeves that previously had detectable wall penetrations (>20%) that have not been plugged, and

that have not been plugged or sleeve repaired in the affected area.

5. Defect means an imperfection of such severity that it exceeds the ~~plugging~~ limit. A tube containing a defect is defective. Any tube which does not permit the passage of the eddy-current inspection probe shall be deemed a defective tube.

6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service because it may become unserviceable prior to the next inspection and is equal to 40%* of the nominal tube wall thickness.

7. 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 as specified in 4.4.5.3.c, above.

8. 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.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2.

4.4.5.5 Reports

a. Following each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission within 15 days.

b. The complete results of the steam generator tube inservice inspection shall be included in the Annual Operating Report for the period in which this inspection was completed. This report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged.

*This 40% plugging limit is not applicable during the cycle 7 operation up to June 30, 1986. If at any time during this period the unit enters any Modes other than Modes 1 and 2, or Mode 3 for greater than 24 hours, the unit shall be placed in cold shutdown and the tubes with indications greater than 40% through-wall penetration shall be removed from service prior to exceeding 200°F.

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9. Sleeving means that tube sleeving is permitted using an approved sleeve design in areas where the sleeve spans the tube sheet area and whose lower joint is at the primary tube sheet face. Each sleeve shall be inspected at the time of installation. Subsequent inspections will be conducted in accordance with the Steam Generator Tube Sampling Selection and Inspection of Surveillance Requirement 4.4.5.2.

Insert 1

Tubes repaired with Westinghouse sleeves shall be removed from service if the sleeve imperfection depth is equal to or greater than 37% of the nominal sleeve wall thickness. Tubes repaired with Combustion Engineering sleeves shall be removed from service if the sleeve imperfection depth is equal to or greater than 34% of the nominal sleeve wall thickness.

3/4.4.5 STEAM GENERATORS (Continued)

The plant is expected to be operated in a manner such that the secondary coolant will be maintained within those parameter limits found to result in negligible corrosion of the steam generator tubes. If the secondary coolant chemistry is not maintained within these parameter limits, localized corrosion may likely result in stress corrosion cracking. The extent of cracking during plant operation would be limited by the limitation of steam generator tube leakage between the primary coolant system and the secondary coolant system (primary-to-secondary leakage = 1 gallon per minute, total). Cracks having a primary-to-secondary leakage less than this limit during operation will have an adequate margin of safety to withstand the loads imposed during normal operation and by postulated accidents. Operating plants have demonstrated that primary-to-secondary leakage of 1 gallon per minute can readily be detected by radiation monitors of steam generator blowdown. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and plugged.

Wastage-type defects are unlikely with the all volatile treatment (AVT) of secondary coolant. However, even if a defect of similar type should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging will be required of all tubes with imperfections exceeding the plugging ~~limit which, by the definition of Specification 4.4.5.4.a is 40% of the tube nominal wall thickness~~. Steam generator tube inspections of operating plants have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness.

or sleeving

or repair limit as defined in Surveillance Requirement 4.4.5.4a. Sleeving of the steam generators shall be in accordance with either WCAP 12076, "St. Lucie Unit 1 Steam Generator Sleeving Report (Mechanical Sleeves)" or CEN-377(F)-P, St. Lucie Unit 1 Steam Generator Tube Repair Using Leak Tight Sleeves.