(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 256 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Special Low Power Test Program

PSE&G shall complete the training portion of the Special Low Power Test Program in accordance with PSE&G's letter dated September 5, 1980 and in accordance with the Commission's Safety Evaluation Report "Special Low Power Test Program", dated August 22, 1980 (See Amendment No. 2 to DPR-75 for the Salem Nuclear Generating Station, Unit No. 2) prior to operating the facility at a power level above five percent.

Within 31 days following completion of the power ascension testing program outlined in Chapter 13 of the Final Safety Analysis Report, PSE&G shall perform a boron mixing and cooldown test using decay heat and Natural Circulation. PSE&G shall submit the test procedure to the NRC for review and approval prior to performance of the test. The results of this test shall be submitted to the NRC prior to starting up following the first refueling outage.

(4) Initial Test Program

PSE&G shall conduct the post-fuel loading initial test program (set forth in Chapter 13 of the Final Safety Analysis Report, as amended) without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

(a) Elimination of any test identified in Chapter 13 of the Final Safety Analysis Report, as amended, as essential;

(b) Modification of test objectives, methods or acceptance criteria for any test identified in Chapter 13 of the Final Safety Analysis Report, as amended, as essential;

(c) Performance of any test at a power level different by more than five percent of rated power from there described; and

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

3. A tube inspection (pursuant to Specification 4.4.6.4.a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.

c. The tubes selected as the second and third samples (if required by Table 4.4-2) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found.

2. The inspections include those portions of the tubes where imperfections were previously found.

d. Implementation of the steam generator WEXTEX expanded region inspection methodology (W*), requires a 100 percent inspection of the inservice tubes for the entire hot leg tubesheet W* distance.

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5% of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.
C-3	More than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes must exhibit significant (greater than 10%) further wall penetrations to be included in the above percentage calculations.

4.4.6.4 Acceptance Criteria

a. As used in this Specification:

1. 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.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.

3. Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal wall thickness caused by degradation.

4. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness. This definition does not apply to service induced degradation identified in the W* distance. Tubes with service induced degradation identified in the W* distance shall be removed from service on detection by tube plugging.

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 4.4.6.3.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, excluding the portion of the tube within the tubesheet below the W* distance, the tube to tubesheet weld and the tube end extension.

SURVEILLANCE REQUIREMENTS (Continued)

9. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service establish a baseline condition of the tubing. This inspection shall be performed after the field hydrostatic test and prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.

10. Bottom of WEXTEX transition (BWT) is the highest point of contact between the tube and the tubesheet at, or below the top-of-tubesheet, as determined by eddy current testing.

11. W* Length is defined as the length of tubing below the bottom of the WEXTEX transition (BWT) that must be demonstrated to be non-degraded in order for the tube to maintain structural and leakage integrity. For the hot leg, the W* length is 7.0 inches, which represents the most conservative hot leg length defined in WCAP-14797, Revision 2.

12. W* Distance is defined in WCAP-14797, Revision 2, as the non-degraded distance from the top of the tubesheet to the bottom of the W* length, including the distance from the top-of-tubesheet to the bottom of the WEXTEX transition (BWT) and Non-Destructive Examination (NDE) measurement uncertainties (i.e., W* distance = W* length + distance to BWT + NDE uncertainties). The W* Distance is the larger of the following two distances as measured from the top-of-the-tubesheet (TTS): (a) 8-inches below the TTS or (b) the non-degraded distance from the TTS to the bottom of the W* length, including the distance from the TTS to the bottom of the WEXTEX transition (BWT) and Non-Destructive Examination (NDE) measurement uncertainties (i.e., W* distance = W* length + distance to BWT + NDE uncertainties)

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.

4.4.6.5 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 the 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.

4. Information regarding the application of W* inspection methodology; including the number of indications, the location of indications (relative to the BWT and TTS), the orientation (axial, circumferential, volumetric), the severity of each indication (e.g., near through-wall or not through wall), the tube side where the indication initiated (inside or outside diameter), the cumulative number of indications detected in the tubesheet region as a function of elevation within the tubesheet, the condition monitoring and operational assessment main steam line leak rate (including aggregate calculated main steam line break leak rate from all other sources), and an assessment of whether the results were consistent with expectations regarding the number of flaws and flaw severity (and if not consistent, a description of the proposed corrective action).

c. Results of steam generator tube inspections which fall into Category C-3 shall be evaluated for reportability pursuant to 10CFR50.72 and 10CFR50.73. The evaluation shall be documented, and shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

d. A notification to the NRC shall be provided prior to unit restart if the estimated main steam line leak rate from 4.4.6.5.b.4 exceeds the design and licensing basis.

3/4.4.6 STEAM GENERATORS (continued)

Wastage-type defects are unlikely with proper chemistry treatment of the secondary coolant. However, even if a defect should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging will be required for all tubes with imperfections exceeding the plugging limit of 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.

License Change Request (LCR) S05-07 (LR-N05-0397, LR-N06-0277, LR-N06-0338) provides requirements for limited tubesheet inspection that is only applicable within the hot leg WEXTEX expanded region of the tubesheet for the Salem Unit 2 Westinghouse Series 51 Steam Generators. LCR S05-07 is supported by, but not limited to, the guidance provided in WCAP-14797, Revision 2, "Generic W* Tube Plugging Criteria for 51 Series Steam Generator Tubesheet Region WEXTEX Expansions" and supporting information provided from Westinghouse Letter Report LTR-CDME-05-30, "W* Integrity Evaluation for Salem Unit 2 Limited SG Tube RPC Examination (Based on WCAP-14797, Revision 2). In accordance with LCR S05-07, the W* length is the undegraded length of tubing into the tubesheet below the bottom of the WEXTEX transition (BWT) that precludes tube pullout in the event of a complete circumferential separation of the tube below the W* length. The W* distance is the larger of the following two distances as measured from the top-of-the-tubesheet (TTS): (a) 8-inches below the TTS or (b) the non-degraded distance from the TTS to the bottom of the W* length, including the distance from the TTS to the bottom of the WEXTEX transition (BWT) and Non-Destructive Examination (NDE) measurement uncertainties (i.e., W* distance = W* length + distance to BWT + NDE uncertainties). Non-Destructive Examination determines the distance to the BWT for each tube. The nondestructive examination (NDE) measurement uncertainty is provided from LCR S05-07, as supported by WCAP-14797 Revision 2. Tubes with indications detected within the W* distance will be removed from service by tube plugging.

Tube degradation of any type or extent below the W* distance, including a complete circumferential separation of the tube, is acceptable and therefore may remain in service. As applied at Salem Unit 2, LCR S05-07 is used to define the required tube inspection depth into the tubesheet, and is not used to permit degradation in the W* distance to remain in service. Furthermore, potential primary to secondary leakage in the W* distance, and below the W* distance, can be conservatively evaluated in accordance with LCR S05-07. The leak rate potential for axial, circumferential, and volumetric indications detected within 12 inches from the top of the tubesheet can be conservatively calculated using the constrained crack model as delineated in LCR S05-07 (supported by Westinghouse LTR-CDME-05-30).

The postulated leakage during a steam line break shall be equal to the following equation, as supported by LCR S05-07:

$$\text{Postulated SLB Leakage} = \text{Assumed Leakage}_{0"-8"<TTS} + \text{Assumed Leakage}_{8"-12"<TTS} + \text{Assumed Leakage}_{>12"<TTS}$$

Where: Assumed Leakage $_{0"-8"<TTS}$ is the postulated leakage for indications that are deemed via flaw depth estimation techniques to be 100% throughwall, and therefore present a potential leak path. This term is applicable to detected indications during an in-service inspection and potentially undetected indications in the steam generator tubes left in service between 0 inches and 8 inches below the top of the tubesheet (TTS). Since tubes with indications detected between 0 and 8 inches below the TTS are plugged upon detection, the calculation of this term for the assessment of SLB leakage for the subsequent operation cycle following an in-service inspection only requires consideration of potentially undetected indications. The calculation of this term for the assessment of SLB leakage for the previous operation cycle, following an in-service inspection, requires consideration of both detected and potentially undetected indications.

Assumed Leakage $_{8-12"<TTS}$ is the conservatively projected leakage in steam generator tubes between 8 and 12 inches below the top of the tubesheet. Implementation of LCR S05-07 does not require tube inspection below the W* Distance, therefore the methodology for conservatively calculating the population of indications between 8 and 12 inches below the TTS is provided by fitting a regression line to the cumulative inspection data (detected indications) from all SGs and projecting the number of indications (to minus 12 inches below TTS) using a 95-percent probability prediction bound. The cumulative indications from all steam generators are conservatively assumed to occur in one SG (similar to figure 16 of Westinghouse LTR-CDME-05-30). The conservative leakage rate for the indications between 8 and 12 inches is 0.0033 gpm multiplied by the number of projected indications (as discussed in LCR S05-07 submittals LR-N06-0277 and LR-N06-0338). The leak rate of indications detected between 8 and 12 inches are bounded by the projected total discussed above, assuming that the inspection results for detected indications do not contradict the calculated population as described previously.

Assumed Leakage $_{>12'\ <TTS}$ is the calculated leakage from the steam generator tubes left in service below 12 inches from the top of the tubesheet. This is 0.00009 gpm times number of tubes left in service in the steam generator.

Each SG is assessed for Main Steam Line Break (MSLB) leakage individually in accordance with the discussion above, and the SG with the most calculated leakage is conservatively assigned as the affected SG.

The calculated MSLB leakage provided above, including MSLB leakage from all other sources, shall be reported to the NRC in accordance with applicable Technical Specifications. The Calculated MSLB Leakage must be less than the maximum allowable MSLB leak rate limit in any one steam generator in order to maintain doses within 10 CFR 50.67 guideline values and within GDC-19 values during a postulated main steam line break event.