PROPOSED TECHNICAL SPECIFICATION CHANGES

3.1.6 Leakage

Specification

3.1.6.1 If the total reactor coolant leakage rate exceeds 10 gpm, the reactor shall be shutdown within 24 hours of detection.

3.1.6.2 If unidentified reactor coolant leakage (exceeding normal evaporative losses) exceeds 1 gpm or if any reactor coolant leakage is evaluated as unsafe, the reactor shall be shutdown within 24 hours of detection.

3.1.6.3.a If it is determined that any reactor coolant leakage exists through a non-isolable fault in a reactor coolant system strength boundary (such as the reactor vessel, piping, valve body, etc., except steam generator tubes), the reactor shall be shutdown and a cooldown to the cold shutdown condition shall be initiated within 24 hours of detection.

3.1.6.3.b If the leakage through the tubes of any one steam generator equals or exceeds 150 gallons per day (0.104 gpm), a reactor shutdown shall be initiated within 4 hours and the reactor shall be in the cold shutdown condition within the next 30 hours.

3.1.6.4 Deleted

3.1.6.5 Action to evaluate the safety implication of reactor coolant leakage shall be initiated within 4 hours of detection. The nature, as well as the magnitude of the leak, shall be considered in this evaluation. The safety evaluation shall assure that the exposure of offsite personnel to radiation is within the guidelines of 10CFR20.

3.1.6.6 If reactor shutdown is required per Specification 3.1.6.1, 3.1.6.2, or 3.1.6.3 the reactor shall not be restarted until the leak is repaired or until the problem is otherwise corrected.

3.1.6.7 When the reactor is at power operation, three reactor coolant leak detection systems of different operating principles shall be in operation. One of these systems is sensitive to radioactivity and consists of a radioactive gas detector and an air particulate activity detector. Both of these instruments may be out-of-service simultaneously for a period of no more than 72 hours provided two other means are available to detect leakage and reactor building air samples are taken and analyzed in the laboratory at least once per shift; otherwise, be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours.

3.1.6.8 Loss of reactor coolant through reactor coolant pump seals and system valves to connecting systems which

A tube inspection (pursuant to Specification 4.18.5.a.9) 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.

3. Tubes in the following groups may be excluded from the first random sample if all tubes in a group in both steam generators are inspected. The inspection may be concentrated on those portions of the tubes where imperfections were previously found. No credit will be taken for these tubes in meeting minimum sample size requirements. Where only a portion of the tube is inspected, the remainder of the tube will be subjected to the random inspection.

   (1) Group A-1: Tubes within one, two or three rows of the open inspection lane.

   (2) Group A-2: Unplugged tubes with sleeves installed.

   (3) Group A-3: Tubes in the wedge-shaped group on either side of the lane region (Group A-1) as defined by Figure 4.18.1.

b. All tubes which have been repaired using the reroll process will have the new roll area inspected during the inservice inspection.

c. The second and third sample inspections during each inservice inspection as required by Table 4.18-2 may be less than a full tube inspection by concentrating the inspection on those areas of the tube sheet array and on those portions of the tubes where tubes with imperfections were previously found.

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.

NOTES: (1) In all inspections, previously degraded tubes whose degradations have not been spanned by a sleeve must exhibit significant (>10%) further wall penetrations to be included in the above percentage calculations.

(2) Where special inspections are performed pursuant to 4.18.3.a.3, defective or degraded tubes found as a result of the inspection shall be included in determining the Inspection Results Category for that special inspection but need not be included in determining the Inspection Results Category for the general steam generator inspection.

(3) Where special inspections are performed pursuant to 4.18.3.b, defective or degraded tube indications found in the new roll area as a result of the inspection and any indications found above the new roll area, are not included in the determination for the inspection results category of a general steam generator inspection.

4.18.4 Inspection Intervals

The above-required inservice inspections of steam generator tubes shall be performed at the following frequencies:

a. The baseline inspection shall be performed during the first refueling shutdown. Subsequent inservice inspections shall be performed at intervals of not less than 10 nor more than 24 calendar months after the previous inspection. If the results of two consecutive inspections for a given group* of tubes following service under all volatile treatment (AVT) conditions fall into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval for that group may be extended to a maximum of 40 months.

b. If the results of the inservice inspection of a steam generator performed in accordance with Table 4.18-2 at 40-month intervals for a given group* of tubes fall in Category C-3, subsequent inservice inspections shall be performed at intervals of not less than 10 nor more than 20 calendar months after the previous inspection. The increase in inspection frequency shall apply until a subsequent inspection meets the conditions specified in 4.18.4.a and the interval can be extended to 40 months.

c. Additional unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.18-2 during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary leakage in excess of the limits of Specification 3.1.6.3.b (Inservice inspection not required if leaks originate from tube-to-tubesheet welds. If the leaking tube is from either Group A-1 or A-3 as defined in Specification 4.18.3.a.3, all of the tubes in the affected group in this steam generator may be inspected in lieu of

*A group of tubes means: (a) All tubes inspected pursuant to 4.18.3.a.3, or
(b) All tubes in a steam generator less those inspected pursuant to 4.18.3.a.3.

the first sample inspection specified in Table 4.18-2. If the degradation mechanism which caused the leak is limited to a specific portion of the tube length, the inspection per this paragraph may be limited to the affected portion of the tube length. If the results of this inspection fall into the C-3 category, all of the tubes in the same group in the other steam generator will also be similarly inspected.

If the leaking tube has been repaired by the reroll process and is leaking in the new roll area, all of the tubes in the steam generator that have been repaired by the reroll process will have the new roll area inspected. If the results of this inspection fall into the C-3 category, all of the tubes with rerolled areas in the other steam generator will also be similarly inspected. This inspection will be in lieu of the first sample inspection specified in Table 4.18-2.

2. A seismic occurrence greater than the Operating Basis Earthquake,

3. A loss-of-coolant accident requiring actuation of the engineered safeguards, or

4. A main steam line or feedwater line break.

4.18.5 Acceptance Criteria

a. As used in this specification:

1. Tubing or Tube means that portion of the tube or sleeve which forms the primary system to secondary system pressure boundary.

2. 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.

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

4. Degraded Tube means a tube containing imperfections $\leq$ 20% of the nominal wall thickness caused by degradation, except where all degradation has been spanned by the installation of a sleeve.

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

6. Defect means an imperfection of such severity that it exceeds the plugging limit except where the imperfection has been spanned by the installation of a sleeve. A tube containing a defect in its pressure boundary is defective.

7. Plugging Limit means the imperfection depth at or beyond which the tube shall be restored to serviceability by the installation of a sleeve, rerolled, or removed from service because it may become unserviceable prior to the next inspection; it is equal to 40% of the nominal tube wall thickness.

The reroll repair process will only be used to repair tubes with defects in the upper tubesheet area. The reroll repair process will be performed only once per steam generator tube using a 1 inch roll length. The new roll area must be free of detectable degradation in order for the repair to be considered acceptable. The reroll repair process is described in the topical report, BAW-10232P, Revision 00.

8. 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 Specification 4.18.4.c.

9. Tube Inspection means an inspection of the steam generator tube from the point of entry completely to the point of exit. For tubes that have been repaired by the reroll process within the upper tubesheet, that portion of the tube above the new roll can be excluded from future periodic inspection requirements because it is no longer part of the pressure boundary once the repair roll is installed.

b. The steam generator shall be determined operable after completing the corresponding actions (plug, reroll, or sleeve all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.18-2.

4.18.6 Reports

Following each inservice inspection of steam generator tubes, the complete results of the inspection shall be reported to the NRC. This report, to be submitted within 45 days of inspection completion, shall include:

a. Number and extent of tubes inspected;

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

c. Identification of tubes plugged and tubes sleeved; and

d. Number of tubes repaired by rerolling and number of indications detected in the new roll area of the repaired tubes.

This report shall be in addition to a Special Report (per Specification 6.12.5.d) required for the results of steam generator tube inspections which fall into Category C-3 as denoted in Table 4.18-2. The Commission shall be notified of the results of steam generator tube inspections which fall into Category C-3 prior to resumption of plant operation. The written Special Report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

Bases

The surveillance requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

Steam generator tubes that are degraded beyond the repair limit can either be plugged, sleeved, or rerolled. The steam generator tubes that are plugged are removed from service by the installation of plugs at both ends of the associated tube and thus completely removing the tube from service.

Degraded steam generator tubes can also be repaired by the installation of sleeves which span the area of degradation and serve as a replacement pressure boundary for the degraded portion of the tube, thus permitting the tube to remain in service.

Degraded steam generator tubes can also be repaired by the rerolling of the tube in the upper tubesheet to create a new roll area and pressure boundary for the tube. The rerolling methodology establishes a new pressure boundary below the degradation, thus permitting the tube to remain in service. The degraded tube above the new roll area can be excluded from future periodic inspection requirements because it is no longer part of the pressure boundary once the repair roll is installed in the upper tubesheet. The rerolling repair process will only be used to repair defects in the upper tubesheet in accordance with BAW-10232P, Revision 00.

All tubes which have been repaired using the reroll process will have the new roll area inspected during future inservice inspections. Defective or degraded tube indications found in the new roll and any indications found in the original roll need not be included in determining the Inspection Results Category for the generator inspection.

The reroll repair process will only be used to repair tubes with defects in the upper tubesheet area. The reroll repair process will be performed only once per steam generator tube using a 1 inch roll length. Thus, multiple applications of the reroll process to any individual tube is not acceptable. The new roll area must be free of detectable degradation in order for the repair to be considered acceptable. After the new roll area is initially deemed acceptable, future degradation in the new roll area will be analyzed to determine if the tube is defective and needs to be removed from service. The reroll repair process is described in the topical report, BAW-10232P, Revision 00.

TABLE 4.18-2

STEAM GENERATOR TUBE INSPECTION [2,3]

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S Tubes per S.G.[1]	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug, reroll, or sleeve defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N/A	N/A
			C-2	Plug, reroll, or sleeve defective tubes and inspect additional 4S tubes in this S.G.	C-1	None
					C-2	Plug, reroll, or sleeve defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	N/A	N/A
	C-3	Inspect all tubes in this S.G. plug, reroll, or sleeve defective tubes and inspect 2S tubes in other S.G. Special Report to NRC pursuant to 6.12.5.d	Other S.G. is C-1	None	N/A	N/A
			Other S.G. is C-2	Perform action for C-2 result of second sample	N/A	N/A
			Other S.G. is C-3	Inspect all tubes in each S.G. and plug, reroll, or sleeve defective tubes. Special Report to NRC pursuant to 6.12.5.d	N/A	N/A

NOTES: [1] $S = \frac{3N}{n}$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection.

[2] For tubes inspected pursuant to 4.18.3.a.3: No action is required for C-1 results. For C-2 results in one or both steam generators plug, reroll, or sleeve defective tubes. For C-3 results in one or both steam generators, plug, reroll, or sleeve defective tubes and provide a Special Report to NRC pursuant to 6.12.5.d.

[3] No more than ten thousand (10,000) sleeves may be installed in both ANO-1 steam generators combined.

MARKUP OF CURRENT ANO-1 TECHNICAL SPECIFICATIONS

(FOR INFO ONLY)

3.1.6 Leakage

Specification

3.1.6.1 If the total reactor coolant leakage rate exceeds 10 gpm, the reactor shall be shutdown within 24 hours of detection.

3.1.6.2 If unidentified reactor coolant leakage (exceeding normal evaporative losses) exceeds 1 gpm or if any reactor coolant leakage is evaluated as unsafe, the reactor shall be shutdown within 24 hours of detection.

3.1.6.3.a If it is determined that any reactor coolant leakage exists through a non-isolable fault in a reactor coolant system strength boundary (such as the reactor vessel, piping, valve body, etc., except steam generator tubes), the reactor shall be shutdown and a cooldown to the cold shutdown condition shall be initiated within 24 hours of detection.

3.1.6.3.b If the leakage through the tubes of any one steam generator equals or exceeds 150~~500~~ gallons per day (0.104~~347~~ gpm)~~*~~, a reactor shutdown shall be initiated within 4 hours and the reactor shall be in the cold shutdown condition within the next 30 hours.

~~* This limit has been reduced to 144 gallons per day (0.1 gpm) for the remainder of cycle 14.~~

3.1.6.4 Deleted

3.1.6.5 Action to evaluate the safety implication of reactor coolant leakage shall be initiated within 4 hours of detection. The nature, as well as the magnitude of the leak, shall be considered in this evaluation. The safety evaluation shall assure that the exposure of offsite personnel to radiation is within the guidelines of 10CFR20.

3.1.6.6 If reactor shutdown is required per Specification 3.1.6.1, 3.1.6.2, or 3.1.6.3 the reactor shall not be restarted until the leak is repaired or until the problem is otherwise corrected.

3.1.6.7 When the reactor is at power operation, three reactor coolant leak detection systems of different operating principles shall be in operation. One of these systems is sensitive to radioactivity and consists of a radioactive gas detector and an air particulate activity detector. Both of these instruments may be out-of-service simultaneously for a period of no more than 72 hours provided two other means are available to detect leakage and reactor building air samples are taken and analyzed in the laboratory at least once per shift; otherwise, be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours.

3.1.6.8 Loss of reactor coolant through reactor coolant pump seals and system valves to connecting systems which

A tube inspection (pursuant to Specification 4.18.5.a.9) 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.

3. Tubes in the following groups may be excluded from the first random sample if all tubes in a group in both steam generators are inspected. The inspection may be concentrated on those portions of the tubes where imperfections were previously found. No credit will be taken for these tubes in meeting minimum sample size requirements. Where only a portion of the tube is inspected, the remainder of the tube will be subjected to the random inspection.

   (1) Group A-1: Tubes within one, two or three rows of the open inspection lane.

   (2) Group A-2: Unplugged tubes with sleeves installed.

   (3) Group A-3: Tubes in the wedge-shaped group on either side of the lane region (Group A-1) as defined by Figure 4.18.1.

b. All tubes which have been repaired using the reroll process will have the new roll area inspected during the inservice inspection.

~~c~~b. The second and third sample inspections during each inservice inspection as required by Table 4.18-2 may be less than a full tube inspection by concentrating the inspection on those areas of the tube sheet array and on those portions of the tubes where tubes with imperfections were previously found.

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.

NOTES: (1) In all inspections, previously degraded tubes whose degradations have not been spanned by a sleeve must exhibit significant (>10%) further wall penetrations to be included in the above percentage calculations.

(2) Where special inspections are performed pursuant to 4.18.3.a.3, defective or degraded tubes found as a result of the inspection shall be included in determining the Inspection Results Category for that special inspection but need not be included in determining the Inspection Results Category for the general steam generator inspection.

(3) Where special inspections are performed pursuant to 4.18.3.b, defective or degraded tube indications found in the new roll area as a result of the inspection and any indications found above the new roll area, are not included in the determination for the inspection results category of a general steam generator inspection.

4.18.4 Inspection Intervals

The above-required inservice inspections of steam generator tubes shall be performed at the following frequencies:

a. The baseline inspection shall be performed during the first refueling shutdown. Subsequent inservice inspections shall be performed at intervals of not less than 10 nor more than 24 calendar months after the previous inspection. If the results of two consecutive inspections for a given group* of tubes following service under all volatile treatment (AVT) conditions fall into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval for that group may be extended to a maximum of 40 months.

b. If the results of the inservice inspection of a steam generator performed in accordance with Table 4.18-2 at 40-month intervals for a given group* of tubes fall in Category C-3, subsequent inservice inspections shall be performed at intervals of not less than 10 nor more than 24 calendar months after the previous inspection. The increased inspection frequency shall apply until a subsequent inspection meets the conditions specified in 4.18.4.a and the interval can be extended to 40 months.

c. Additional unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.18-2 during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary leakage in excess of the limits of Specification 3.1.6.3.b (Inservice inspection not required if leaks originate from tube-to-tubesheet welds. If the leaking tube is from either Group A-1 or A-3 as defined in Specification 4.18.3.a.3, all of the tubes in the affected group in this steam generator may be inspected in lieu of

*A group of tubes means: (a) All tubes inspected pursuant to 4.18.3.a.3, or
(b) All tubes in a steam generator less those inspected pursuant to 4.18.3.a.3.

the first sample inspection specified in Table 4.18-2. If the degradation mechanism which caused the leak is limited to a specific portion of the tube length, the inspection per this paragraph may be limited to the affected portion of the tube length. If the results of this inspection fall into the C-3 category, all of the tubes in the same group in the other steam generator will also be similarly inspected.)

If the leaking tube has been repaired by the reroll process and is leaking in the new roll area, all of the tubes in the steam generator that have been repaired by the reroll process will have the new roll area inspected. If the results of this inspection fall into the C-3 category, all of the tubes with rerolled areas in the other steam generator will also be similarly inspected. This inspection will be in lieu of the first sample inspection specified in Table 4.18-2.

2. A seismic occurrence greater than the Operating Basis Earthquake,

3. A loss-of-coolant accident requiring actuation of the engineered safeguards, or

4. A main steam line or feedwater line break.

4.18.5 Acceptance Criteria

a. As used in this specification:

1. Tubing or Tube means that portion of the tube or sleeve which forms the primary system to secondary system pressure boundary.

2. 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.

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

4. Degraded Tube means a tube containing imperfections ≤ 20% of the nominal wall thickness caused by degradation, except where all degradation has been spanned by the installation of a sleeve.

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

6. Defect means an imperfection of such severity that it exceeds the plugging limit except where the imperfection has been spanned by the installation of a sleeve. A tube containing a defect in its pressure boundary is defective.

7. Plugging Limit means the imperfection depth at or beyond which the tube shall be restored to serviceability by the installation of a sleeve, rerolled, or removed from service because it may become unserviceable prior to the next inspection; it is equal to 40% of the nominal tube wall thickness.

The reroll repair process will only be used to repair tubes with defects in the upper tubesheet area. The reroll repair process will be performed only once per steam generator tube using a 1 inch roll length. The new roll area must be free of detectable degradation in order for the repair to be considered acceptable. The reroll repair process is described in the topical report, BAW-10232P, Revision CO.

8. 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 Specification 4.18.4.c.

9. Tube Inspection means an inspection of the steam generator tube from the point of entry completely to the point of exit. For tubes that have been repaired by the reroll process within the upper tubesheet, that portion of the tube above the new roll can be excluded from future periodic inspection requirements because it is no longer part of the pressure boundary once the repair roll is installed.

b. The steam generator shall be determined operable after completing the corresponding actions (plug, reroll, or sleeve all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.18-2. ~~with the following exception:~~

~~Tubes with intergranular attack indications within the upper tube sheet with the potential of through-wall depths greater than the plugging limit may remain in service for the remainder of cycle 14.~~

4.18.6 Reports

Following each inservice inspection of steam generator tubes, the complete results of the inspection shall be reported to the NRC. This report, to be submitted within 45 days of inspection completion, shall include:

a. Number and extent of tubes inspected;

b. Location and percent of wall-thickness penetration for each indication of an imperfection; ~~and~~

c. Identification of tubes plugged and tubes sleeved~~;~~; and

d. Number of tubes repaired by rerolling and number of indications detected in the new roll area of the repaired tubes.

This report shall be in addition to a Special Report (per Specification 6.12.5.d) required for the results of steam generator tube inspections which fall into Category C-3 as denoted in Table 4.18-2. The Commission shall be notified of the results of steam generator tube inspections which fall into Category C-3 prior to resumption of plant operation. The written Special Report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

Bases

The surveillance requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

Steam generator tubes that are degraded beyond the repair limit can either be plugged, sleeved, or rerolled. The steam generator tubes that are plugged are removed from service by the installation of plugs at both ends of the associated tube and thus completely removing the tube from service.

Degraded steam generator tubes can also be repaired by the installation of sleeves which span the area of degradation and serve as a replacement pressure boundary for the degraded portion of the tube, thus permitting the tube to remain in service.

Degraded steam generator tubes can also be repaired by the rerolling of the tube in the upper tubesheet to create a new roll area and pressure boundary for the tube. The rerolling methodology establishes a new pressure boundary below the degradation, thus permitting the tube to remain in service. The degraded tube above the new roll area can be excluded from future periodic inspection requirements because it is no longer part of the pressure boundary once the repair roll is installed in the upper tubesheet. The rerolling repair process will only be used to repair defects in the upper tubesheet in accordance with BAW-10232P, Revision 00.

All tubes which have been repaired using the reroll process will have the new roll area inspected during future inservice inspections. Defective or degraded tube indications found in the new roll and any indications found in the original roll need not be included in determining the Inspection Results Category for the generator inspection.

The reroll repair process will only be used to repair tubes with defects in the upper tubesheet area. The reroll repair process will be performed only once per steam generator tube using a 1 inch roll length. Thus, multiple applications of the reroll process to any individual tube is not acceptable. The new roll area must be free of detectable degradation in order for the repair to be considered acceptable. After the new roll area is initially deemed acceptable, future degradation in the new roll area will be analyzed to determine if the tube is defective and needs to be removed from service. The reroll repair process is described in the topical report, BAW-10232P, Revision 00.

TABLE 4.18-2

STEAM GENERATOR TUBE INSPECTION [2,3]

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S Tubes per S.G.[1]	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug, reroll, or sleeve defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N/A	N/A
			C-2	Plug, reroll, or sleeve defective tubes and inspect additional 4S tubes in this S.G.	C-1	None
					C-2	Plug, reroll, or sleeve defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	N/A	N/A
	C-3	Inspect all tubes in this S.G. plug, reroll, or sleeve defective tubes and inspect 2S tubes in other S.G. Special Report to NRC pursuant to 6.12.5.d	Other S.G. is C-1	None	N/A	N/A
			Other S.G. is C-2	Perform action for C-2 result of second sample	N/A	N/A
			Other S.G. is C-3	Inspect all tubes in each S.G. and plug, reroll, or sleeve defective tubes. Special Report to NRC pursuant to 6.12.5.d	N/A	N/A

NOTES: [1] $S=3\frac{N}{n}$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection.

[2] For tubes inspected pursuant to 4.18.3.a.3: No action is required for C-1 results. For C-2 results in one or both steam generators plug, reroll, or sleeve defective tubes. For C-3 results in one or both steam generators, plug, reroll, or sleeve defective tubes and provide a Special Report to NRC pursuant to 6.12.5.d.

[3] No more than ten thousand (10,000) sleeves may be installed in both ANO-1 steam generators combined.

Attachment 1

This attachment contains Revision 00 of topical report BAW-10232P.

This topical report is proprietary to Framatome Technologies, Inc.

Attachment 2

This attachment contains the affidavit from Framatome Technologies, Inc. stating that Revision 00 of topical report BAW-10232P contained in Attachment 1 of this letter is considered proprietary by Framatome Technologies, Inc.

AFFIDAVIT OF JOSEPH J. KELLY

A. My name is Joseph J. Kelly. I am Manager of B&W Owners Group Services for Framatome Technologies, Inc. (FTI), and as such, I am authorized to execute this Affidavit.

B. I am familiar with the criteria applied by FTI to determine whether certain information of FTI is proprietary and I am familiar with the procedures established within FTI to ensure the proper application of these criteria.

C. In determining whether an FTI document is to be classified as proprietary information, an initial determination is made by the Unit Manager, who is responsible for originating the document, as to whether it falls within the criteria set forth in Paragraph D hereof. If the information falls within any one of these criteria, it is classified as proprietary by the originating Unit Manager. This initial determination is reviewed by the cognizant Section Manager. If the document is designated as proprietary, it is reviewed again by me to assure that the regulatory requirements of 10 CFR Section 2.790 are met.

D. The following information is provided to demonstrate that the provisions of 10 CFR Section 2.790 of the Commission's regulations have been considered:

(i) The information has been held in confidence by FTI. Copies of the document are clearly identified as proprietary. In addition, whenever FTI transmits the information to a customer, customer's agent, potential customer or regulatory agency, the transmittal requests the recipient to hold the information as proprietary. Also, in order to strictly limit any potential or actual customer's use of proprietary information, the substance of the following provision is included in all agreements entered into by FTI, and an equivalent version of the proprietary provision is included in all of FTI's proposals:

"Any proprietary information concerning Company's or its Supplier's products or manufacturing processes which is so designated by Company or its Suppliers and disclosed to Purchaser incident to the performance of such contract shall remain the property of Company or its Suppliers and is disclosed in confidence, and Purchaser shall not publish or otherwise disclose it to others without the written approval of Company, and no rights, implied or otherwise, are granted to produce or have produced any products or to practice or cause to be practiced any manufacturing processes covered thereby.

Notwithstanding the above, Purchaser may provide the NRC or any other regulatory agency with any such proprietary information as the NRC or such other agency may require; provided, however, that Purchaser shall first give Company written notice of such proposed disclosure and Company shall have the right to amend such proprietary information so as to make it non-proprietary. In the event that Company cannot amend such proprietary information, Purchaser shall prior to disclosing such information, use its best efforts to obtain a commitment from NRC or such other agency to have such information withheld from public inspection.

Company shall be given the right to participate in pursuit of such confidential treatment."

(ii) The following criteria are customarily applied by FTI in a rational decision process to determine whether the information should be classified as proprietary. Information may be classified as proprietary if one or more of the following criteria are met:

a. Information reveals cost or price information, commercial strategies, production capabilities, or budget levels of FTI, its customers or suppliers.

b. The information reveals data or material concerning FTI research or development plans or programs of present or potential competitive advantage to FTI.

c. The use of the information by a competitor would decrease his expenditures, in time or resources, in designing, producing or marketing a similar product.

d. The information consists of test data or other similar data concerning a process, method or component, the application of which results in a competitive advantage to FTI.

e. The information reveals special aspects of a process, method, component or the like, the exclusive use of which results in a competitive advantage to FTI.

f. The information contains ideas for which patent protection may be sought

The document(s) listed on Exhibit "A", which is attached hereto and made a part hereof, has been evaluated in accordance with normal FTI procedures with respect to classification and has been found to contain information which falls within one or more of the criteria enumerated above. Exhibit "B", which is attached hereto and made a part hereof, specifically identifies the criteria applicable to the document(s) listed in Exhibit "A".

(iii) The document(s) listed in Exhibit "A", which has been made available to the United States Nuclear Regulatory Commission was made available in confidence with a request that the document(s) and the information contained therein be withheld from public disclosure.

(iv) The information is not available in the open literature and to the best of our knowledge is not known by ABB CE, EXXON, General Electric, Westinghouse or other current or potential domestic or foreign competitors of FTI.

(v) Specific information with regard to whether public disclosure of the information is likely to cause harm to the competitive position of FTI, taking into account the value of the information to FTI; the amount of effort or money expended by FTI developing the information; and the ease or difficulty with which the information could be properly duplicated by others is given in Exhibit "B".

E. I have personally reviewed the document(s) listed on Exhibit "A" and have found that it is considered proprietary by FTI because it contains information which falls within one or more of the criteria enumerated in Paragraph D, and it is information which is customarily held in confidence and protected as proprietary information by FTI. This report comprises

AFFIDAVIT OF JOSEPH J. KELLY (Cont'd.)

Information utilized by FTI in its business which afford FTI an opportunity to obtain a competitive advantage over those who may wish to know or use the information contained in the document(s).

JOSEPH J. KELLY

State of Virginia)
) SS. Lynchburg
City of Lynchburg)

Joseph J. Kelly, being duly sworn, on his oath deposes and says that he is the person who subscribed his name to the foregoing statement, and that the matters and facts set forth in the statement are true.

JOSEPH J. KELLY

Subscribed and sworn before me
this 28th day of January 1998.

Brenda C. Cardona
Notary Public in and for the City
of Lynchburg, State of Virginia.

My Commission Expires July 31, 1999

EXHIBITS A & B

EXHIBIT A

FTI Topical Report BAW-10232P, Rev. 00, "OTSG Repair Roll Qualification Report (Including Hydraulic Expansion Evaluation)," January 1998.

EXHIBIT B

The above listed document contains information which is considered Proprietary in accordance with Criteria b, c and d of the attached affidavit.