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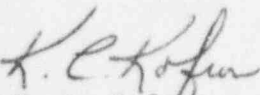
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Byron Station Units 1 and 2
10 CFR 50.59 Annual Report
NRC Docket Nos. 50-454 and 50-455

Pursuant to the requirements of 10 CFR 50.59 (b)(2), Byron Station is providing the required annual report for Facility Operating License Nos. NPF-37 and NPF-66. This report is being provided for the 1995 calendar year and consists of descriptions and safety evaluation summaries for changes to the facility as described in the safety analysis report. No tests or experiments governed by paragraph (a) of 10 CFR 50.59 were performed. Also included as part of this report are changes made to features of the fire protection program not previously presented to the NRC Staff.

Please direct any questions regarding this submittal to Laurie Lahti, Regulatory Assurance Department, at (815) 234-5441 extension 2852.


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Byron Nuclear Power Station
10 CFR 50.59 Summary Report
1995
NRC Docket Nos. 50-454 and 50-455
License Nos. NPF-37 and NPF-66

MODIFICATION M6-0-86-173

DESCRIPTION:

The modification replaced the alarm source that signaled problems with the auxiliary building charcoal booster systems with direct current alarms that received signals from flow transmitters. Previously, the alarms were based on high and low differential pressure signals measured across the fans, rather than actual flow in the ducts. The flow transmitters provide a signal that is used to position associated dampers. The modified alarm meets the requirement of ANSI N509-1980 for high/low flow alarms. The new alarms annunciate on the same windows as the previous alarms. The differential pressure switches for the former alarms are considered installed spares.

In addition, the design air flow through the system was changed. The new flow rates are based on the installed filter capacity of the system and the requirement to maintain proper flow, pressure, and environmental conditions in the non-accessible areas.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the flow alarms provide a direct measurement of flow in the system and provide low or high flow conditions in the control room. The equipment is qualified for the design conditions of the application.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the auxiliary building ventilation is not changed. The source of the alarm signal system is more representative of the actual flow conditions than the previous alarms. The alarm annunciates in the main control room, as it had previously.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the flow requirements in Technical Specification 3/4.7.6, Control Room Ventilation System, are met. The flow alarm setpoints are consistent with the Technical Specification limits.

MODIFICATION M6-2-89-018

DESCRIPTION:

The modification replaced sample isolation valves for reactor coolant system loops, pressurizer liquid, and pressurizer steam sample. A total of eight valves were replaced. The original valves were prone to seat, stem packing, and body to bonnet leakage. The new valves are designed to minimize leakage.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the new valves were designed, fabricated, and installed in accordance with the Class 2 requirements of ASME Section III. The function and operation of the valves and system were not changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created. The new valves were selected to improve system reliability.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because no margin of safety involves the specific model of valve used in the primary sampling system. Technical Specification 3/4.4, Reactor Coolant System, was not affected by replacement of valves.

MODIFICATION M6-2-91-019

DESCRIPTION:

The modification revised the gear ratio in the motor operator for containment spray valves 2CS007A&B. The modification also replaced the #14 gauge power cable for valve 2CS007B with #6 gauge power cable. The higher gear ratio increased the motor operator thrust capability. The heavier power cable improved operator performance under degraded voltage conditions.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the modification improved the reliability of the 2CS007A&B valves. The valves' thrust margin was increased and valve performance during degraded voltage conditions was improved. The increase in valve stroke time to 9.6 seconds is within the UFSAR accident analysis allowance of 20 seconds for valve opening time. Seismic capability of the valves was unchanged.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the valves reliability was improved. The change resulted in a larger margin between operator thrust and required thrust. The larger gauge cable installed for the 2CS007B valve improved the valve's degraded voltage performance. The increase in operator thrust capability is controlled by the motor operator torque switch to thrust and torque values less than the valve and operator structural ratings. The operator thrust is limited by the torque switch setting to a value below the structural rating of the valve and operator. The valve and operator seismic rating remain satisfactory with the higher thrust. The modification did not adversely affect the function of any system or component. New accident scenarios are not credible.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the modification had no impact on the margin of safety. The CS007 valves are containment isolation valves and are required to stroke closed within 30 seconds. The UFSAR analysis is based on the containment spray valves opening within 20 seconds. The gear changes increased the valve stroke time to 9.6 seconds, which is well within the Technical Specification and UFSAR requirements.

MODIFICATION M6-2-92-004

DESCRIPTION:

The modification replaced incore thermocouple cables and connectors. The old cables and connectors were environmentally qualified for 10 years and were approaching the end of the qualified life. The replacement cables and connectors were supplied by a different manufacturer and are environmentally qualified for 40 years.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the new cabling system maintains redundancy, electrical and physical separation per the original design requirements. The change associated with the modification was physical, not functional. Post-modification testing was performed to verify proper system operation. The new cabling system reduced the number of connectors and cables.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the modification replaced existing connectors and mineral cables with a new 40 year qualified cabling system, due to end of EQ life. The new cabling system maintains redundancy, electrical and physical separation per the original design requirements. The change associated with the modification was physical, not functional.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change did not affect any parameters upon which Technical Specifications are based.

MODIFICATION M6-0-93-801-A1

DESCRIPTION:

The modification installed new supports on existing fire protection system piping in the unit 1 turbine building. These supports are required to satisfy the original support spacing criteria and to restore design margin in the piping system.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the fire protection (sprinkler) systems remain operable to control and extinguish any fire. Fire barriers are not derated so the spread of a fire would be controlled.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the fire protection system, including sprinklers and fire barriers, are not affected. The loads added to the walls were qualified. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because fire protection is not addressed in the Technical Specifications. Fire protection remains operable, as required.

MODIFICATION M6-2-93-854

DESCRIPTION

The modification replaced the main generator hydrogen seal oil CUNO filters with duplex cartridge filters. This allows filter changes with the seal oil system in service. The new filters remove smaller particles. In addition, a filter differential pressure alarm was added. The fire protection deluge system was changed to provide coverage of the larger area needed for the new equipment.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the seal oil system continues to operate as originally designed. Reliability is increased because a standby filter was added that can be manually valved in when filter differential pressure increases to the alarm setpoint. The deluge system continues to provide fire protection to the seal oil skid. The probability of a main generator / main turbine trip is unchanged. No safety-related systems are affected.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because seal oil system operation and performance remain unchanged. No safety systems or systems required to mitigate an accident are affected.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because no systems or components addressed in Technical Specifications are affected.

MODIFICATION M6-0-93-913

DESCRIPTION:

The modification added a conveyer belt and handling table at the boric acid batching tank platform. These are used to move boric acid containers from the 401' elevation of the auxiliary building to the batching platform on 410'-6" elevation. This system provides a better material handling system than the previous method, which required lifting 350 pound barrels with a hoist to the batching platform. The platform work area is tight, making maneuvering the barrels difficult. The barrels have also been replaced with smaller, easier to handle bags.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the modified equipment has no effect on other systems and equipment. The equipment is located in the general area of the auxiliary building at 401' elevation. There is no equipment located near the boric acid system that could be affected. The conveyer and table are seismically mounted. The installation of the conveyer and table has no effect on systems that could affect off-site dose.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because there is no effect on the operation of any other system. The failure of the conveyer has the same effect as the failure of the existing hoist.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the boric acid material handling equipment is not addressed by any Technical Specification.

EXEMPT CHANGE M6-0-94-814-B1

DESCRIPTION:

This exempt change was part of a change to convert a storage room on the third floor of the service building into office space. The partial exempt change included various load analysis and human factor changes due to the change of the store room to the work control center in regards to fire protection alarms in the main control room.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because all of the changes were to equipment in the service building. There is no impact to station operation or safety. No accidents or malfunctions were affected.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the systems, structures, and components changed were limited to the non-safety service building. There is no impact to station operation or safety. New failure modes were not created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the changes did not affect any parameters upon which Technical Specifications are based.

EXEMPT CHANGE M6-1-94-831

DESCRIPTION:

The modification deleted pushbutton station 1HS-CO083 to simplify the operation of the carbon dioxide (CO2) system. The pushbutton was previously used to open the auxiliary building CO2 header manual backup master valve, 0CO052. However, unlike the other CO2 pushbuttons, 1HS-CO083 had to remain depressed to keep valve 0CO052 open. Also, 1HS-CO083 could only pressurize the auxiliary building CO2 header. Valve 0CO052 can be operated manually using the lever on electro-manual pilot control (EMPC) 0CO023J. This EMPC operation is the same as the EMPC operations used to open other CO2 master valves. In addition, valve 0CO052 will fail open if power is lost to EMPC 0CO023J. Therefore, deleting pushbutton 1HS-CO083 made the manual operation of valve 0CO052 consistent with the operation of the other CO2 master valves.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the exempt change did not increase the amount of combustibles, nor did it increase the number of potential ignition sources. The change did not adversely affect the operation of the CO2 system. The auxiliary building CO2 header manual backup master valve is still available in the event that the main master valve fails to open.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the change did not alter the design basis of any system, nor adversely affect the function of any system or component that is safety-related or important to safety. The CO2 system remains capable of adequately suppressing fires. New accident scenarios or malfunctions are not credible.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the exempt change did not affect any systems or parameters addressed in the Technical Specifications.

MODIFICATION DESIGN CHANGE PACKAGE 9400166

DESCRIPTION:

The modification added a low point drain to service air line OSA05A-4 near valve OSA133. This drain line makes it easier to remove unwanted water from the air line and prevents the need to break open a flange at valve OSA133 for line draining.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the change does not affect the operation of the service air system.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. There is no impact on the safety function of any system or component. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change did not affect any parameters upon which Technical Specifications are based.

MODIFICATION DCP 9400190

DESCRIPTION:

The modification replaced Thermolag fire barrier material with an approved alternate material, Darmatt, on some cable raceways. The material was replaced because the NRC disqualified Thermolag. The replacement material provides protection against thermal damage to the safe shutdown cables in these raceways in the event of a fire.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the disqualified fire barrier is replaced with an approved fire barrier. The analyses for the design also verified that sufficient margin exists for power cable ampacities and that structural support is adequate.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because a fire barrier is used when redundant safe shutdown trains are present in the same fire zone. This satisfies the requirements in 10 CFR 50, Appendix R, Section III, which allows redundant trains to be separated or protected via a fire barrier material.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the fire barrier is not addressed in the bases for any Technical Specification.

EXEMPT CHANGE DCP 9400370

DESCRIPTION:

The modification removed the handwheel and installed an accessory cap on valve 1RC8089B. This replacement eliminated a reactor coolant system leakage path to the containment.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the piping subsystem was analyzed for the additional weight of the valve cap and was found to be adequate. The valve cap was supplied by the original equipment supplier and is intended for this use.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the valve was not changed. The valve is an isolation valve for the resistance temperature detector manifold (RTD) manifold in the RTD bypass system. The valve is passive, manually operated, and normally open. The valve was verified to be open prior to installation of the cap and will remain so permanently. The valve can no longer be manipulated, however, alternate means of isolating the manifold are available.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the function of the RTD bypass system was not changed by the addition of the valve cap. The valve is not required for the RTD bypass system to perform its function. With the valve permanently in the open position, the RTD bypass system will continue to operate as designed.

UFSAR DRAFT REVISION PACKAGE 6-011

DESCRIPTION:

This UFSAR change added a provision to use the recycle monitor tank pumps to recirculate water between the recycle monitor tanks via the recycle evaporator condensate demineralizer. The change also clarified that the recycle evaporator condensate demineralizer is not limited to using anion resin to polish the distillate.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the assumptions and conditions evaluated in the accident are not changed. A potential rupture of the recycle monitor tanks due to operator error is bounded by the UFSAR accident analysis presented in Subsection 15.7.2, Radioactive Liquid Waste System Leak or Failure (Atmospheric Release).
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the UFSAR does not take credit for the operation of the liquid radwaste system or operator action to mitigate the consequences of an accident. The potential accident is bound by UFSAR Subsection 15.7.2. The additional processing through the recycle evaporator decreases liquid radwaste curie content and subsequent releases to the environment.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

UFSAR DRAFT REVISION PACKAGE 6-012

DESCRIPTION:

This UFSAR change deleted references to in-vessel regeneration capability for the steam generator blowdown mixed-bed demineralizers. The demineralizer vessels were modified to remove regeneration equipment and allow desired flow rates during operation.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because removing the regeneration equipment has no impact on the capability of the steam generator blowdown system to be used following a steam generator tube rupture accident, described in Subsection 15.6.3. The equipment is not required; nor is it used. Removing the unneeded equipment improves secondary side chemistry and steam generator operation.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the modified vessel does not adversely affect the seismic mounting of the vessel or any system parameter. No new failure mode is introduced.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

GENERIC LETTER 89-13 COMMITMENT

DESCRIPTION:

Byron revised two commitments to Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." Specifically, Byron no longer inspects the river screen house and essential service water cooling tower basins for asiatic clams. Additionally, Byron had informed the NRC that a chemical feed system to inject sodium bromide would be used beginning January 1990. The Illinois EPA has restricted the use of this chemical, therefore, sodium hypochlorite is used exclusively.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because there is no impact on essential service water operation. The generic letter requires sampling to detect when clams are in the water source. After clams are discovered, a treatment program that meets the generic letter should be implemented, and the sampling may be discontinued. Byron's current chemical treatment program meets the generic letter requirement. Therefore, since an effective program is already in place to control biofouling, the sampling is not required. There is no effect on the amount of expected biofouling, so the essential service water function remains unchanged.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not increased because current biofouling control techniques ensure that essential service water flow through heat exchangers is not degraded. Essential service water cooling requirements continue to be met. Equipment is sufficiently sized to accommodate expected fouling. The controls that are in place to limit biofouling would also be used if clams were discovered. No additional controls are needed, and no increase to expected fouling is expected.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

ADMINISTRATIVE TECHNICAL REQUIREMENTS AMENDMENT 9

DESCRIPTION:

This amendment to the Administrative Technical Requirements clarified that a fire watch must be established for those areas in which redundant systems or components necessary for safe shutdown could be damaged. The amendment allowed the station to discontinue excessive fire watches for the carbon dioxide and halon systems.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because there were no physical equipment alterations. The fire barriers and components remain capable of performing their design function of protecting against the consequences of a fire. Compensatory measures to protect safe shutdown equipment to mitigate plant damage are consistent with the requirements of 10 CFR 50 Appendix R.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not increased because there is no change to the functionality of any fire protection equipment. The fire watch compensatory measure requirements are consistent with 10 CFR 50 Appendix R criteria and do not significantly affect system or component reliability. The requirements are consistent with the basis used to judge the acceptability of the fire protection program.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

ADMINISTRATIVE LIMIT FOR F* LENGTH

DESCRIPTION:

The administrative limit for F* length was increased from 1.70 inches to 1.75 inches. Steam generator tubing defects located within the tubesheet may remain in service provided their location is at least the F* distance from the top of the tubesheet. The total F* distance is determined by the minimum distance required for structural integrity and the uncertainty of the eddy current measurement technique to locate the defect. Included in the F* distance is an 0.20 inch allowance for eddy current measurement uncertainty. The eddy current vendor used in the Byron Unit 1 Fall 1995 inspection provided an eddy current measurement uncertainty of 0.25 inches. Therefore, the F* length was administratively lengthened from 1.70 inches to 1.75 inches to account for the increased measurement uncertainty. This ensures that the minimum structural integrity distance is maintained.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the administrative limit is in the conservative direction and ensures the same structural integrity of the tubes as the original F* distance.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the administrative limit is in the conservative direction and ensures the same structural integrity of the tubes as the original F* distance.

ON-SITE REVIEW 95-126
STEAM GENERATOR LASER WELD LOWER HARD ROLL JOINT

DESCRIPTION:

Byron On-Site Review 95-126 reviewed and evaluated a change in the installation sequence of the steam generator laser welded sleeves. The laser welded sleeve was originally tested and evaluated based on installing the lower hard roll joint prior to welding the upper joint. The sleeve installation process sequence was altered due to lessons learned from sleeving installations at other utilities. The new installation sequence installs the lower hard roll joint following welding and heating the upper joint. Since this installation sequence differed from the original qualification, confirmatory testing and analysis was performed to verify proper joint integrity and leak tightness.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the new sleeve installation sequence was tested and qualified to meet Regulatory Guide 1.121 structural integrity requirements during all modes of operation and during the most limiting faulted conditions.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created. Leakage tests performed on the hard roll joints resulted in negligible leakage at main steam line break differential pressures and is fully bounded by existing analyses for the consequences of a tube rupture and of a main steam line break.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the new sleeve installation sequence was tested and qualified to meet the appropriate structural and leakage requirements.

WESTINGHOUSE NON-CONFORMANCE REPORTS
CAE-95-005, CAE -95-006 AND CAE-95-008
(EXPANSION MANDRELS STUCK IN STEAM GENERATOR TUBES)

DESCRIPTION:

As a result of implementing 3.0 volt Interim Plugging Criteria, selected tubes were required to be expanded into the tube support plates to prevent plate displacements during accident scenarios. During this modification process, three expansion mandrel tools became lodged in tubes and were unable to be retrieved. The expansion mandrels were left in the tubes and the affected tubes were plugged. The affected tubes were 45-32 and 27-15 in the 1D steam generator and tube 9-46 in the 1B steam generator. This safety evaluation addressed the impact of the expansion mandrels left in the plugged tubes.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the affected tubes were removed from service through tube plugging. The expansion mandrels in the plugged tubes do not affect the integrity of the tubes and plugs.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the affected tubes have been removed from service through tube plugging. The expansion mandrels do not affect the integrity of the tubes and plugs.

MISPOSITIONED STEAM GENERATOR LASER WELDED SLEEVE WELDS

DESCRIPTION:

During the 1D steam generator laser welded sleeving process, five welds were positioned outside the allowable tolerance for weld location as referenced on the sleeve design drawing. The mispositioned welds were still located within the expanded portion of the sleeve and were sufficiently far from the expansion transition to not impact stress evaluations. The welds were verified to meet all structural and design requirements, therefore, the sleeves were left in service. Actual weld position tolerance is not referenced in the sleeve qualification report nor in the NRC Safety Evaluation.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the mispositioned welds were verified with non-destructive examination techniques to be structurally sound and meet the all sleeve design criteria for structural and leakage integrity. The welds are sufficiently far from the expansion transition to not affect the stress concentrations in the sleeve or weld and would not be detrimental to the operation of the tube/sleeve assembly.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the sleeves with the mispositioned sleeves have the same structural integrity and leak tightness as sleeves with welds within the position tolerance.

POSSIBLE FOREIGN OBJECTS IN UNIT 2 STEAM GENERATORS

DESCRIPTION:

During the eddy current inspection of the Unit 2 steam generator tubes, signals were found that were indicative of foreign objects. The signals were located in regions of the 2B and 2C steam generators that were inaccessible to visual confirmation or retrieval with existing shell penetrations. The affected tubes were stabilized and plugged. This safety evaluation addressed operation of the steam generators with potential foreign objects in the steam generators.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the tubes in contact with the potential foreign objects have been stabilized and removed from service. The wear rates associated with the objects and cross flow velocities at the object locations are sufficiently low to not impact tube structural integrity should the parts migrate to other tubes prior to the next eddy current inspection. The objects have been determined to be small in size and mass such that only minor tube denting would occur due to main steam line break transients and tube integrity would not be jeopardized.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the objects would not affect the amount of primary-to-secondary leakage should a leak occur.

REMOVAL OF TUBES FROM UNIT 1 STEAM GENERATORS

DESCRIPTION:

Ten tubes were removed from the 1A steam generator. The tubes were cut below the first hot-leg tube support plate, and the lower portion of the tubes were removed. The remaining portion of the tubes remained in the steam generator. The tube remnants were expanded at the first, or first and second tube support plates to reduce the effects of flow stability. The hot-leg tube hole was plugged with a welded plug, and the cold leg tube was mechanically plugged.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the tubes were removed from service at the primary interface of the tube and tube hole. The remaining tube remnants were expanded at the lower tube support plate to reduce the effects of flow vibration. Operation of the steam generators with the tube remnants is not expected to result in any additional load on surrounding tubes.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the tubes and tube holes of the removed tubes were plugged at both ends. The tube remnants in the plugged tubes are not expected to interact with adjacent inservice tubes.

EXTRA TUBE SUPPORT PLATE LOCKING SLEEVES INSTALLED
IN THE UNIT 1 STEAM GENERATORS

DESCRIPTION:

Selected steam generator tubes were required to have sleeves hydraulically expanded above and below tube support plates to lock the plates in place. This was required for implementation of 3.0 volt Interim Plugging Criteria. Due to difficulties in the expansion process, 12 locking sleeves were installed at the incorrect location. The sleeves were left in-place and the tubes removed from service. This safety evaluation addresses steam generator operation with locking sleeves installed that are not bounded by the 3.0 volt Interim Plugging Criteria requirements.

SAFETY EVALUATION SUMMARY:

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased because the affected tubes were removed service. All sleeves expansions were of acceptable size to adequately anchor the sleeve in-place. The expansion diameters of the sleeves are of a size to not create a corrosion degradation concern. A flow vibration analysis was performed and the sleeves were found not to cause any structural or wear concerns.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because system operation and performance remain unchanged. No new equipment failure modes or interactions have been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the affected tubes were removed from service and no longer act as a primary pressure boundary. The sleeves do not impact the operation of the steam generators or impact adjacent inservice sleeves.