Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379

April 27, 2000

10 CFR 50.50a(a)(3)(i)

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentleman:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - REQUEST FOR APPROVAL OF RELIEF FROM AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE REQUIREMENTS - REQUEST FOR RELIEF RI-IST-1 - RISK INFORMED INSERVICE TESTING - VALVES

References:
1. NRC Regulatory Guide 1.175, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing," issued August 1998
2. NRC Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment In Risk Informed Decisions On Plant-Specific Changes to the Licensing Basis" issued July 1998

Enclosed is Request for Relief RI-IST-1 for SQN's Second 10-Year Inservice Test (IST) Program. The proposed request for relief implements a risk-informed IST Program. As an alternative to the quarterly valve test frequency specified in the ASME Code, TVA proposes to specify new valve test frequencies. Based on quantitative and qualitative assessments associated with this change, TVA determined that the overall impact to plant safety with regard to core damage frequency (CDF) and large early release frequency (LERF) is well within the risk acceptable guidelines of Reference 2. The effect of TVA's proposed change with regard to probability is calculated to be an increase of 0.53 percent for CDF and an increase of 0.25 percent for LERF. TVA is submitting RI-IST-1 pursuant to 10 CFR 50.55a(a)(3)(i) as a proposed alternative that would provide an acceptable level of quality and safety.

RGN-001 sent in by Region A047

TVA utilized valve performance test data coupled with risk-informed evaluations of SQN's current probabilistic safety assessment (PSA) and Maintenance Rule Program data to establish new valve test intervals for 160 valves in SQN's IST Program (SQN's IST Program contains approximately 1500 valves for both units).

The proposed RI-IST-1 is based on SQN's current IST Program that was approved by NRC letter dated August 7, 1998. The applicable sections of the ASME Code associated with the proposed relief request are ASME Section XI, 1989 Edition, Subsection IWV.

TVA is requesting NRC review and approval of RI-IST-1 to support IST schedules associated with SQN's Unit 1 Cycle 11 refueling outage. This refueling outage is currently scheduled to start in September 2001.

If you have any questions regarding this response, please contact me at extension (423) 843-7071 or Jim Smith at extension (423) 843-6672.

Sincerely,

Pedro Salas
Licensing and Industry Affairs Manager

Enclosure
cc (Enclosure):

Mr. R. W. Hernan, Project Manager
Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy-Daisy, Tennessee 37379-3624

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-3415

ENCLOSURE

SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 & 2
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
REQUEST FOR RELIEF RI-IST-1
RISK-INFORMED INSERVICE TESTING - VALVES

EXECUTIVE SUMMARY:

This enclosure outlines a request for relief from certain aspects of the ASME Boiler and Pressure Vessel Code, Section XI, Operations & Maintenance (O&M) Pump, and Valve Inservice Test (IST) requirements. The primary objective of this request is to reduce challenges to routine/safe operation of the plant through reductions in the number of unnecessary periodic tests on certain valves while strengthening the effectiveness of the tests and overall plant safety. This process will allow TVA to take advantage of the indirect improvements in plant safety that will be gained by allowing plant IST resources to be focused on higher risk component tests. In addition, TVA anticipates the level of maintenance resulting from frequent valve tests and that the precipitated wear on valve components will be reduced.

TVA's proposed request utilizes valve performance test data coupled with risk-informed evaluations of the existing plant probabilistic safety assessment (PSA) and Maintenance Rule Program data to establish new valve test intervals. New test intervals are established for valves identified as low risk, low maintenance, good performing test result valves. The proposed tests and test intervals are commensurate with the valves' associated impact to overall plant safety.

Existing risk-informed pilot plant topical reports, industry owner's groups guidelines, and NRC Regulatory Guides (RG)(RG 1.175, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing," and 1.174, "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes to the Licensing Basis") were utilized as guidance in TVA's evaluation of the technical data. In addition, ASME Code Case OMN-3, "Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants," was used as guidance in evaluation of the systems considered. TVA's intent is to apply these principles to 160 valves that were identified as good test and low maintenance performers within SQN's IST Program. The overall impact of extending valve test frequency to plant safety in terms of core damage frequency (CDF) and large early release frequency (LERF) was shown to be within the risk-acceptance guidelines in RG 1.174.

This request for relief is submitted in accordance with the provisions of Title 10, Part 50, Section 55a, Paragraph (a)(3)(i), of the Code of Federal Regulations [10 CFR 50.55a(a)(3)(i)] on the basis that the proposed alternative will provide an acceptable level of quality and safety.

RI-IST-1

UNITS:	Units 1 and 2
SYSTEM(S):	See Attachment A for a list of valves and systems
ASME CODE CLASS (EQUIVALENT):	Class 1, 2, and 3, as indicated in Attachment A
ASME SECTION XI CODE EDITION/ADDENDA:	Sequoyah Nuclear Plant (SQN) performs inservice testing of valves in accordance with the requirements shown in the ASME Section XI, 1989 Edition, Subsection IWV. This subsection endorses the use of the ASME/ANSI O&M Standard OM Part 10. In accordance with 10 CFR 50.55a(3)(b)(2)(viii), OM Standards Part 10 from the 1987 Edition through the OMa-1988 Addenda are used as the base code of record for the SQN IST Program.
CODE REQUIREMENTS:	ASME Section XI, 1989 Edition, Subsection IWV, O&M Standard, 1987 Edition through the OMa-1988 Addenda, Part 10, "Inservice Testing of Valves in Light-Water Reactor Power Plants."

O&M Part 10, Paragraph 3.2, "Inservice Testing Requirements" - "Active and passive valves in the categories defined in paragraph 1.4 shall be tested in accordance with the paragraphs specified in Table 1."

O&M Part 10, Paragraph 4.2.1.1, "Exercising Test Frequency" - "Active Category A and B valves shall be tested nominally every 3 months, except as provided by paragraphs 4,2.1.2, 4.2.1.5, and 4.2.1.7."

O&M Part 10, Paragraph 4.3.2.1, "Exercising Test Frequency" - "Check Valves shall be exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5."

CODE REQUIREMENT FROM WHICH RELIEF IS BEING REQUESTED: Relief is requested from the nominal three-month test frequency for valves listed in Attachment A to this enclosure.

JUSTIFICATION FOR GRANTING RELIEF: Justification for the proposed change to the test frequency of the valves listed in Attachment A is provided in the following evaluation:

TVA's evaluation is a blend of analyses of current operational and maintenance history, valve test data, and PSA data. Where appropriate, risk assessment sensitivity studies were performed to evaluate the degree of impact the test interval changes would have to the existing plant CDF estimates. The effects on LERF were evaluated through engineering analysis and judgments on the available data and other plant/component operational information. In addition, issues such as plant personnel safety and costs for the conduct of the valve tests were considered.

SQN PSA Risk Informed IST Description

PSA Scope

By letter dated May 15, 1995, NRC staff provided the results of their evaluation for SQN's original Individual Plant Examination (IPE) (IPE Revision 0, September 1992 models, Levels 1 and 2 analysis). The staff evaluation concluded that SQN's IPE met the intent of Generic Letter (GL) 88-20. Since the initial IPE submittal, a number of plant changes and events have taken place. These were evaluated to determine the potential impact on the IPE results and were incorporated into SQN's IPE during the most recent Level 1 IPE update process (reference TVA letter to NRC dated February 20, 1998). TVA has continued to refine and improve the PSA to include external events, recent design modifications, updated plant procedures, enhanced training programs, maintenance, and operational changes. Accordingly, the SQN PSA model Revision 1, was used to support this request for relief.

PSA Level of Detail

SQN PSA Revision 1 models the specific failure modes of valves. In some cases, the valves have more than one failure mode. These failure modes may include failure to open, failure to close, failure to remain open, and failure to remain closed.

PSA Quality

The SQN PSA model is used to determine the increase in CDF and LERF as a result of the test interval changes described in this relief request. The Revision 1 model establishes the base SQN PSA CDF and LERF values at 3.8E-05 and 4.45E-06, respectively.

The SQN risk model uses the proprietary RISKMAN computer program for cutset generation and event tree quantification. The risk models use a small fault tree and/or large event tree method of quantification.

SQN's Maintenance Rule Program, that was developed to implement the requirements of 10CFR50.65, is based on the PSA model. The results of NRC inspections that were conducted in December 1996 (see NRC Inspection Report 96-12), along with follow-up inspections conducted in 1997 and 1998, conclude that SQN's Maintenance Rule Program is comprehensive and is effectively implemented.

Description of the Risk-Informed Evaluation Process

Components within SQN's IST Program were identified for possible application of the risk-informed methodologies and were evaluated in the following manner:

Sensitivity studies were performed, using SQN's PSA Revision 1, to determine the increase in CDF and LERF resulting from the decrease in the valve's test frequencies. The IST valves considered for this evaluation are currently tested on a quarterly basis (every 92 days), with exception of the containment spray (CS) system valves. These CS system check valves are currently disassembled and inspected on a rotating basis, during refueling outages, in accordance with an existing SQN IST Program relief request (RV-1). The test frequency considered in this proposed change assumes a test frequency of once every refueling cycle (18 months). This increase in test interval equates to an increase by a factor of 6 in the time between periodic tests. The PSA evaluation conservatively assumes that the increase in failure rate of the valves is linearly proportional to the increase in test interval. In other words, a decrease in the test frequency by a factor of 6 results in an increase in the failure frequency by a factor of 6. The factor of 6 is applied to common cause variables as well as independent failure frequencies.

In other cases, an evaluation was developed to show that the change would not affect the component's frequency of failure; therefore, it would have no effect on the plant's CDF. The effect on LERF was evaluated through an integrated risk analysis of three systems that are associated with the containment isolation function. The three systems are System 30, Containment Ventilation - purge air supply and exhaust isolation valves; System 77, Waste Disposal - valves; and System 90, Radiation Monitoring - valves. The results of this evaluation are documented in SQN engineering calculation SQN-MEB-MDN0999-000078.

Following the risk evaluation and development of the proposed changes, the proposed changes were reviewed with plant systems engineers and the plant's expert panel.

This expert panel membership consisted of personnel experienced in the plant's standard Maintenance Rule Expert Panel processes. The expert panel included a plant Maintenance representative, an Operations representative, personnel familiar with the ASME Section XI Repair and Replacement Program; specific plant systems engineers, as needed; the Component Engineering Manager, acting as the panel Chairman; supplemented with the site IST

Program engineer and personnel cognizant of the site specific PSA.

Task team personnel developed the proposed changes and discussed these changes with the expert panel. Final decisions on the dispositions of the proposed changes were made by the panel. The panel decisions and the reason for the decisions were documented and recorded in the panel meeting minutes and on system evaluation worksheets. The resulting list of proposed changes in test intervals was compiled and is provided in Attachment A to this enclosure.

Component Specific Evaluation Details

Justification for the proposed change in the IST intervals for the valves listed in Attachment A is based upon the following evaluation.

Description of the Component Specific Evaluation Process

Valves in the ASME Section XI IST Program were reviewed against their associated maintenance history, preventive maintenance programs, IST test data history and trends. Valves that exhibited low maintenance and low corrective action needs over the past three to five years, and that were consistently good test performers, were compiled into a list and reviewed.

The criteria for consistently good test performance was established as having no Section XI Code test failures and/or associated corrective actions over the past three years. Valves that are currently tested only during cold shutdown or refueling test frequencies were eliminated from the resulting list, except for the CS, System 72 - check valves. These CS system check valves are disassembled and inspected on a rotating basis, during refueling outages, in accordance with an existing SQN IST Program relief request (RV-1). The CS system valves were chosen for evaluation because they were judged to incur unusually stringent "test" conditions, that resulted in personnel safety hazards during the periodic disassembly and inspection activities.

In addition, motor-operated valves (MOVs) were eliminated from the list because there is currently a separate TVA initiative to develop the MOV Program in accordance with recent NRC Guidelines (NRC GL 96-05) and industry initiatives.

TVA's process resulted in an initial list of 403 valves in 12 systems that were compared with the SQN PSA Program for identification of IST components that are modeled. Valves that were not modeled in the plant PSA Program were eliminated. Valves that were similar in plant and/or unit-system configurations to the components that are modeled, were retained. This resulted in a list of 160 valves in 10 systems. This reduced population was then evaluated for possible extension of their test intervals as supported by the risk-informed process described above. The 10 systems (and their system numbers) are:

1) Steam Generator (S/G) Blowdown (001)
2) Heating & Ventilation - Purge Air (030)
3) Compressed Air - Control Air (032)
4) Chemical & Volume Control (062)
5) Safety Injection (063)
6) Essential Raw Cooling Water (ERCW) (067)
7) Component Cooling (070)
8) CS (072)
9) Waste Disposal (077)
10) Radiation Monitoring (090)

The completed list of valves are shown in Attachment A. A synopsis of the evaluation of each system's valves is as follows:

S/G Blowdown (001): These valves are 2-inch containment isolation valves located in the blowdown lines. They are active valves that are not required to be leak tested in accordance with Appendix J, Option B, because of their physical arrangement and the system conditions (temperature and pressure) following accident initiation and containment isolation initiation. A risk analysis sensitivity study was conducted for these valves to evaluate the

relative impact of extension of their test intervals from a quarterly test to a test basis of once per each refueling cycle.
Based upon this analysis, these valves were estimated to result in an increase in the plant CDF above the base case of approximately 3.0E-9 or a less than 0.01 percent increase in the plant CDF. In addition, these valves exhibit good performance during routine tests. These valves are occasionally operated during normal plant operations. Degradation of these valves would be discovered by plant operations personnel during these operating periods.
Based on this evaluation, it was judged that the test interval for these valves could be adjusted from a quarterly basis to a once per refueling cycle basis with little effect to the plant CDF and LERF.

TVA proposes to conduct inservice testing on the subject S/G blowdown valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

Heating & Ventilating [Purge Air] (030): These valves are 24-, 12-, and 8-inch butterfly valves located in the Purge Air supply and exhaust lines. The 1,2-FCV-30-015 and the FCV-30-014 valves are the inboard and outboard containment isolation valves (CIV) for penetration X-10A, which is used for the lower compartment purge air supply. In the case of the 1,2-FCV-30-056 and -057 valves, these valves are the inboard and outboard CIVs for the X4 penetrations which are used for lower compartment purge air exhaust. These valves are tested on a quarterly basis in accordance with technical specifications (TS). They perform a containment isolation function and are important to controlling the release of containment atmospheric gases. These valves have an effect on plant LERF but not on CDF.

The SQN TSs require that these valves be leak rate tested in accordance with Appendix J, Option B, criteria. These valves were evaluated for extension of the quarterly stroke and exercising test interval to a once per refueling cycle interval basis.

The results of the evaluation performed on the three systems' valves indicated that the expected increase in the plant LERF above the base case was approximately 1.1E-08 per year or about 0.25 percent. Note that these valves will continue to be leak rate tested in accordance with TS, Appendix J, Option B, leak rate test criteria. These valves are occasionally operated to regulate containment atmospheric conditions. As a result, degradation of these valves would be discovered during their normal operation. Additionally, with the primary use of these valves being a containment isolation function, leak rate testing of these valves would identify any significant degradation in the leak tightness of these valves through the available trends in the test data. Therefore, the increase in LERF, as a result of the increased test interval for these valves, was evaluated to be sufficiently small enough to allow the adjustment of the test interval and within the guidelines established in NRC RG 1.174.

TVA proposes to test the subject heating and ventilation valves on a once per refueling cycle basis in accordance with the requirements of OM-10. Leak rate testing for these valves will continue in accordance with the Appendix J, Option B, program requirements.

Compressed Air (032): The listed auxiliary control air compressor cooling water valves are 1-inch valves located in the auxiliary control air system and open when the auxiliary control air compressors are stared to allow ERCW to cool the compressor.

These valves are modeled in the plant PSA. They are tested on a quarterly basis. A risk analysis sensitivity study was performed on these valves evaluating an increase in the test interval from quarterly to once per refueling cycle; with a comparable assumed increase in failure rate of the valve of a factor of 6. The results of this study indicated that the increase in CDF would be approximately 2.0E-09 or less than 0.01 percent over the base value. The change in test frequency for these valves was also evaluated to result in a similar increase in the plant's LERF, which is a percentage increase of 0.045 percent. These valves are routinely operated and exercised as the auxiliary control air compressors are operated; therefore, any failure of these valves would be readily discovered during normal plant operations.

TVA proposes to test the subject compressed air system valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

Chemical & Volume Control (062): These valves are 2-inch and 3-inch process flow check valves in the reactor coolant pump (RCP) seal water injection lines. They are currently tested on a quarterly basis in compliance with the OM-10 standard by verifying that they are indicating open and that the required flow is present in the seal water system. These check valves are tested closed during refueling outages.

However, whenever the RCPs are operating, these valves must be open and cannot be closed unless the RCP is not running, as for refueling outages. The proper flow of the seal injection water through these valves during plant power operation is a vital requirement; therefore, the seal flow is continuously monitored. Any decrease in this flow is immediately detected and corrective measures initiated.

Testing to verify that the valves will open fully at or near the frequency performed during refueling outages would be sufficiently frequent to allow for the assessment of the valves' capability to perform their intended functions. TVA performed an integrated risk analysis sensitivity study on these valves and System 63 cold leg injection check valves to evaluate the effects on plant damage and release frequencies resulting from an increase in the valve test intervals from quarterly to once per refueling cycle. This was represented as an increase in the failure frequency for these valves equal to a factor of 6. The results of this evaluation indicated that an estimated increase in plant CDF above the base case would be approximately 5.4E-08 per year or an increase of 0.14 percent. Thus, any reduction in the quarterly test SRs, performed primarily for the purposes of compliance with the OM-10 requirements, would have minimum effect on the plant CDF and would have no effect on TVA's ability to assess the operability of these valves. This same logic holds true for the contribution to the plant's overall LERF value that results from this proposed change to the valve test intervals.

TVA proposes to test the subject chemical and volume control system (CVCS) valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

Safety Injection (063): These valves are check valves in the cold leg boron injection path to the reactor vessel and are modeled in the PSA for both transient and loss-of-coolant accident event initiators. These valves are closed during normal plant operations and are verified closed on a quarterly basis, in accordance with the requirements of OM-10, and fully tested in the open and closed positions, in accordance with the SQN IST Program refueling outage justification. System leakage through these valves in the closed position is readily detected through the normal operation of the plant with monitoring of the reactor coolant system inventory and the normal CVCS make-up operation.

If this leakage occurs it is usually detected through the increase in the safety injection system pressure as indicated in the centrifugal charging pump injection tank. The routine quarterly verification of the closed condition of these valves has little value in the assessment of the valves' functions and overall plant operability. In addition, an integrated risk analysis sensitivity study was performed on these valves in conjunction with the System 62 valves to evaluate an increase in the valve test intervals from quarterly to once per refueling cycle. This was represented as an increase in the failure frequency for these valves equal to a factor of 6. The results of this study indicated that the increase in CDF would be approximately 1.2E-07 per year or about 0.32 percent over the base value. The resulting change in the associated plant LERF value would be approximately the same. Therefore, the reduction in the frequency of the routine closed test verification for these valves will have minimum effect on the plant CDF or LERF.

TVA proposes to test the subject safety injection check valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

ERCW (067): The listed valves are flow control valves in piping that supplies cooling water to safety-related pump room coolers for the component cooling and motor-driven auxiliary feedwater pump areas, the safety injection pump room, and the CS pump room. These valves open to emit cooling water to the room coolers when the associated safety-related pump starts are initiated during accident conditions. These valves are currently full stroke time tested and fail safe open tested each quarter. The most probable failure mode for these valves was judged to be that the valves would fail open. A risk analysis sensitivity study was performed on these valves to evaluate an increase in the valve test intervals from quarterly to once per refueling cycle. This represented an increase of the failure frequency for these valves equal to a factor of 6.

This study also evaluated the effects on the plant's CDF value for the failure mode that the valves would transfer closed. The results of this study indicated that the estimated increase in CDF would be approximately 2.5E-08 or less than 0.07 percent over the base value. Therefore, the reduction in the frequency of the routine open test verification for these valves will have minimum effect on the plant CDF. These valves were judged to have little additional direct impact on the accidents that would contribute to the failure of the overall containment isolation function. Therefore, the change in test frequency for these valves was also evaluated to have an equivalent increase in plant LERF values and a percentage increase of 0.56 percent.

TVA proposes to test the subject ERCW system valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

Component Cooling (070): The valves listed are check valves that vary in size from 4 inches to 1 1/2-inch nominal valve/pipe size. These valves are associated with the supply of component cooling water from the thermal barrier booster pumps and its distribution through the component cooling system piping to the RCP thermal barriers. These valves are open during normal operation and remain open whenever the operation of the thermal barriers is required. The thermal barrier booster pump suction check valves, 1,2-VLV-070-0671, and the pump discharge check valves, 1,2-VLV-070-676A, -676B, -679, and the individual in-series thermal barrier supply line check valves are currently tested each quarter only by verifying that the valves are in their fully open positions. These valves must remain open during plant power operation therefore, they are not exercised from the full open to the closed position on a quarterly basis. Failure of the thermal barrier check valves to close in the event of the failure of the thermal barriers could result in the over pressurization of the supply side piping which is only designed to withstand 200 pounds per square inch gauge of pressure.

The most important function is for these valves to close in the event of the failure of the RCP thermal barriers. Because of the in-series physical design of the thermal barrier supply check valves, an assessment of the operability of these valves is best performed by disassembly of these valves and observing that the valve is fully capable of opening and is free to promptly close. This type of test can only be performed at and/or during refueling outages. Repeated verification of the open position of these check valves through the use of a quarterly surveillance test adds minimum worth to tests that would best be performed on these valves on a refueling cycle basis in conjunction with the disassembly of the check valves on a group rotating basis. The open verification of these valves was judged to provide minimum value. In addition, flow through the thermal barriers is monitored by Operations personnel on a routine basis. Any variation of flow in the RCP thermal barriers would be readily identified with corrective action promptly initiated. Extension of the test intervals for the open verification of these valves to a refueling cycle basis was evaluated as having little or no impact on the ability to assess the operability of the valves and likewise little or no impact on the plant CDF or LERF.

TVA proposes to test these check valves in the open position on a once per refueling cycle basis. The disassembly of the valves will be performed on a rotated basis as a group.

CS (072): The CS check valves (four per unit; two on residual heat removal [RHR] spray headers and two on the CS headers) are located in the containment dome region about 30 feet above the elevation of the polar crane.

These valves are tested in accordance with the SQN IST Program generic relief request RV-1 and the related guidelines in NRC RG 89-04, Position 2, and NRC NUREG-1482. This relief (RV-1) allows for the disassembly of these valves on a rotating basis of the valves in the group with one of the valves disassembled each refueling outage. The requirement to disassemble one of these valves each refueling outage places SQN plant Maintenance personnel in unsafe conditions with a potential for personnel injury (i.e., falls from approximately 100 feet). In addition, this disassembly requires the construction of scaffolding from the top of the polar crane. This results in high impact to the plant's refueling floor scheduled activities and requires special plans to protect personnel from the high potential of falls and the potential injury of personnel and damage to equipment below from falling objects. TVA has evaluated the use of the program requirements as outlined in ASME O&M Code, 1995 Edition through the OMa-1996 Addenda. This evaluation included the impact of a proposed program on the overall plant risk CDF and LERF values. In TVA's judgment, the conduct of the spray nozzle flow verification test is sufficient to verify that the valve has the needed freedom of movement. These valves (in rotation) have been disassembled at least 14 times with no indication of any degradation of the valve parts nor any indication that these valves would fail to operate properly. This is expected considering the physical construction of the valves, the component's stainless steel materials, and the dry environmental conditions that they normally encounter. Any movement of these valve parts, in conjunction with the periodically scheduled nozzle flow test, will provide sufficient information to allow for reasonable assessments of the valves condition and operability. In TVA's judgment, the use of this test is in keeping with the overall program to maintain minimum or no impact to the SQN plant CDF and LERF risk values.

TVA proposes to delete the periodic disassembly of theses valves and limit valve assessment to regularly scheduled spray nozzle flow verification test data and other TVA maintenance history and industry experience for these valves.

TVA will suspend the disassembly schedule of one valve on a rotating basis once each outage. TVA will continue to monitor industry experience, TVA's maintenance history of the CS check valve and any results from tests of the spray header flow. Adjustments, as needed, in the maintenance and/or disassembly and inspection schedules will be made based upon the information available.

Waste Disposal (077): The listed waste disposal system valves are tested primarily because they perform a containment isolation function. The 1,2-FCV-077-09 and -010 valves are associated with the reactor coolant drain tank pump discharge to the plant tritiated drain collector tank. The 1,2-FCV-077-018, -019, and -020 valves are associated with the reactor coolant drain tank vent and nitrogen pressurization supply lines that penetrate the containment. The proposed testing for these valves is to extend the frequency of testing from a quarterly test to a once per refueling cycle basis. Because of the location and function of these valves, there would be no change to the plant CDF as a result of the proposed test interval. In addition, the impact to the plant's release frequency values as a result of the extension of the test frequency was evaluated.

This evaluation resulted in an estimated increase in the plant LERF above the base case of approximately 1.1E-08 per year or about 0.25 percent. This estimated change is in line with the guidelines shown in NRC RG 1.174. Sufficient verification of the operability of these valves would be obtained through testing once during each refueling cycle.

TVA proposes to test the subject waste disposal system valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

Radiation Monitoring (090): These valves perform the containment isolation function for the reactor building atmosphere suction and return lines associated with certain area radiation monitors. These are 1 1/2-inch globe valves that are IST categorized as A-Active. These valves are normally open to emit containment atmospheric air and gases to the radiation monitors and to return the air sample flow back into containment. These valves are full stroke exercised and timed to the closed position each quarter. Test history of these valves has shown that their performance has remained consistently good over the lifetime of their usage. These valves operate in relatively dry and clean conditions; therefore, have a reduced likelihood of sticking in the unsafe open position. In addition, these valves are relatively small valves in small sample lines of rigid construction. The likelihood of a series pair of these valves failing to close at the same time is extremely remote. Therefore, the likelihood of these valves severely impacting radioactive releases during a design basis accident would be extremely remote. Because of their specific function these valves will have minimal or no effect on the plant CDF value. Because of historically good test performance, physical arrangement and application, and the remote possibility for simultaneous multiple failures of these valves, TVA's proposed extension of the valve test interval from the current quarterly basis to a once per refueling cycle basis is considered acceptable.

This evaluation resulted in an estimated increase in the plant LERF above the base case of approximately 1.1E-08 per year or about 0.25 percent.

TVA proposes to test the subject radiation monitoring system valves on a once per refueling cycle basis in accordance with the requirements of OM-10.

Corrective Action Program Considerations

Under TVA's proposed change, valves that exhibit test results outside their associated acceptance criteria will be evaluated and corrective actions initiated in accordance with the requirements shown in ASME O&M Standard, Part 10. Test deficiencies encountered during the proposed testing will continue to be evaluated and controlled in accordance with TVA's Corrective Action Program. As part of this overall programmatic evaluation, the test frequency for the valve will be evaluated for the need to change the test interval between any subsequent tests. In addition, if the deficiency warrants, the test methodology applied to the valve will be evaluated for the need to improve the test attributes. This evaluation shall be documented and records of the evaluation maintained as part of the valves test history. These Corrective Action Program aspects, in addition to the Preventive Maintenance Program attributes, are implemented at SQN. Together, these two programs comprise an aggressive maintenance, repair, and replacement process that will ensure that the valves will be able to perform their intended function.

RI-IST Program Components Reassessment Plan

Under the proposed change, TVA will reassess the Attachment A list of valves in accordance with the above guidelines and analyses at least once every other refueling outage. This reassessment interval is chosen on the basis that at least two sets of test data at the proposed new test intervals is available for establishing valve degradation trends. This reassessment interval is consistent with the routine planned review of the plant PSA Program. As part of this evaluation, the list of valves will be periodically reassessed for incorporation of the latest industry experience and TVA specific plant test and maintenance history. This review will ensure that the proposed testing and future testing will remain consistent with other plant programs, such as the SQN Maintenance Rule Program.

Summary of the Effects on Previously Approved SQN IST Program Relief Requests and/or Plant TSs

A review of the SQN IST Program and its associated basis document indicates that there are no new relief requests or ancillary exemptions which will be precipitated by this limited scope RI-IST Program request. With one exception (see discussion below regarding SQN's CS header check valves), the proposed changes do not affect other existing IST Program relief requests. In addition, a review of TVA's commitment database (NRC commitments) and the SQN TSs was performed. These reviews did not identify any SQN TS changes or revisions to commitments that would be needed to support the proposed risk-informed test frequency.

With regard to SQN's CS header check valves, these valves are part of a generic IST relief request (RV-1) that discusses disassembly of check valves on a rotating basis. RV-1 lists SQN's CS check valves as Valve Group #3. Upon NRC approval of TVA's proposed RI-IST-1, TVA plans to revise SQN Relief Request RV-1 to delete the Group #3 listing.

Review of RI-IST Program Guideline Principles

TVA's limited scope application of the RI-IST principles in the proposed request preserves the basic attributes of a broad-based consensus supported application of the ASME O&M Code required testing. Except as stated in the above analysis, testing performed on the subject IST valves will remain the same and will continue to be in accordance with ASME O&M-10. Where applicable, TVA has incorporated newer or later Code Edition and Addenda IST Program processes in order to preserve the basic NRC endorsement for the use of the ASME Codes. TVA has applied the RI-IST analysis principles in an effort to increase the test intervals where warranted. TVA's approach is designed to delete unnecessary testing and reduce detrimental wear on the subject valves and valve components. The process described above incorporates the primary guidelines and basic intent of RG 1.175.

Consideration of the original acceptance conditions, criteria, operating and design limits, risk significance of the component, quality and integrity, diversity, redundancy, defense-in-depth, and aspects of the requirements of 10 CFR 50, Appendix A, "General Design Criteria," and other principles outlined in RG 1.174 are embodied in the expert panel review process which is an integral part of the overall project. Based upon the analysis performed, the cumulative effect of the proposed change results in an increase in the plant CDF, over the base case, of approximately 2.0E-07 or about 0.53 percent. The estimated change in the plant LERF, over the base case, is approximately 1.1E-08 or about 0.25 percent. These values are within the acceptance guideline limits (for Region III) for changes in the risk metrics as delineated in RG 1.174 (i.e., less than 1.0E-06 for CDF and less than 1.0E-07 for LERF, respectively).

Conclusion:

TVA's proposed change for application of the risk-informed IST principles meets the intent of NRC RGs 1.174 and 1.175. The processes described above and the proposed IST Program changes on both high and low safety significant components were developed through the use of traditional engineering analysis and judgment and close adherence to the consensus based ASME O&M requirements. This process was also conducted in such a manner to preserve the primary principle of defense-in-depth. The cumulative change in overall plant CDF value from the analyzed components was estimated to be less than 0.53 percent above the base value. Similarly, the estimated change to the plant LERF values was estimated to be less than 0.25 percent. These estimated changes are within the acceptance guidelines shown in RG 1.174, Figures 3 and 4, in that the estimated increases in the plant CDF and LERF values are within Region III of the figures. A reasonable balance is preserved with the prevention of code damage, prevention of containment failure, and plant design basis accident consequence mitigation. In addition, over reliance on programmatic activities is avoided. System redundancy, independence, and diversity are preserved as the expected frequency of the challenges to the system and components were considered as part of the above analysis. Common cause failure components were conservatively assumed to have the same failure rates as those assumed for the specifically analyzed value. Thus, the defense against common cause failures was preserved and the independence of the plant safe operation barriers were not degraded. For these components, the basic plant defense against human error was judged to have increased because of the reduced number of valve tests and the reduced associated human interface with the vital components. In the above processes, TVA has endeavored to maintain the intent of the risk-informed application guidelines and the intent of the 10 CFR 50, Appendix A, General Design Criteria. Therefore, this request meets the criteria of the Code of Federal Regulations paragraph requirements of 10 CFR 50.55a(a)(3)(i) in that the proposed alternative testing for these components will provide an acceptable level of quality and safety.

ALTERNATIVE EXAMINATION(S)

The proposed frequency of test shall be within the intervals indicated in Attachment A. The method of testing of the listed valves shall remain as required by the Part 10 of the 1987 Edition through the OMa-1988 Addenda of the ASME O&M Standards; with the exception of the proposed program for the CS and RHR spray header check valves. The spray header check valves will be monitored and maintained as previously described in the above discussion for the System 72 valves.

The listed valves will be periodically reassessed to incorporate industry experience and specific plant test and maintenance history. TVA will reassess the attached list of components in accordance with the above guidelines and analysis at least once every other refueling outage.

IMPLEMENTATION SCHEDULE:

TVA plans to develop an implementation schedule following approval of this request. TVA will commence testing in accordance with this relief request at the first available test interval after this relief request has been approved and after the associated site surveillance instructions have been revised to incorporate the applicable requirements.

Enclosure 1

Attachment A

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	*Valve Number*	*ASME Class*	*Valve Category*	*Normal Position*	*Required Test Interval*	*New Test Interval*	*Risk Significance Due to change*
001 - Steam Generator Blowdown							
	SQN-1-FCV -001-0007	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0181	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0014	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0182	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0025	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0183	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0032	2	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -001-0184	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0007	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0181	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0014	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0182	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0025	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0183	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0032	2	B-ACT	O	QTR	RC	LOW
	SQN-2-FCV -001-0184	2	B-ACT	O	QTR	RC	LOW
030 - Heating & Ventilating Air Flow							
	SQN-1-FCV -030-0007	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0008	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0009	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0010	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0014	2	A-ACT	C	QTR	RC	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
030 - Heating & Ventilating Air Flow - Continued							
	SQN-1-FCV -030-0015	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0016	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0017	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0019	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0020	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0037	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0040	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0046	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0047	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0048	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0050	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0051	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0052	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0053	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0056	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0057	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0058	2	A-ACT	C	QTR	RC	LOW
	SQN-1-FCV -030-0059	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0007	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0008	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0009	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0010	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0014	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0015	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0016	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0017	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0019	2	A-ACT	C	QTR	RC	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
030 - Heating & Ventilating Air Flow - Continued							
	SQN-2-FCV -030-0020	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0037	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0040	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0046	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0047	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0048	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0050	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0051	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0052	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0053	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0056	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0057	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0058	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -030-0059	2	A-ACT	C	QTR	RC	LOW
032 - Compressed Air							
	SQN-0-FSV -032-0061	3	B-ACT	C	QTR	RC	LOW
	SQN-0-FSV -032-0087	3	B-ACT	C	QTR	RC	LOW
062 - Chemical & Volume Control							
	SQN-1-VLV -062-0543	2	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0560	1	C	O	QTR	RO	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
062 - Chemical & Volume Control (Continued)							
	SQN-1-VLV -062-0561	1	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0562	1	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0563	1	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0576	2	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0577	2	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0578	2	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0579	2	C	O	QTR	RO	LOW
	SQN-1-VLV -062-0697	2	C-PAS	O	QTR	RO	LOW
	SQN-2-VLV -062-0543	2	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0560	1	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0561	1	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0562	1	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0563	1	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0576	2	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0577	2	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0578	2	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0579	2	C	O	QTR	RO	LOW
	SQN-2-VLV -062-0697	2	C-PAS	O	QTR	RO	LOW
063 - Safety Injection							
	SQN-1-VLV -063-0581	1	C	--	QTR	RO	LOW
	SQN-1-VLV -063-0586	1	C	--	QTR	RO	LOW
	SQN-1-VLV -063-0587	1	C	--	QTR	RO	LOW
	SQN-1-VLV -063-0588	1	C	--	QTR	RO	LOW
	SQN-1-VLV -063-0589	1	C	--	QTR	RO	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
063 - Safety Injection (continued)							
	SQN-2-VLV -063-0581	1	C	--	QTR	RO	LOW
	SQN-2-VLV -063-0586	1	C	--	QTR	RO	LOW
	SQN-2-VLV -063-0587	1	C	--	QTR	RO	LOW
	SQN-2-VLV -063-0588	1	C	--	QTR	RO	LOW
	SQN-2-VLV -063-0589	1	C	--	QTR	RO	LOW
067 - Essential Raw Cooling Water							
	SQN-1-FCV -067-0162	3	B-ACT	O	QTR	RC	LOW
	SQN-1-FCV -067-0164	3	B-ACT	C	QTR	RC	LOW
	SQN-2-FCV -067-0217	3	B-ACT	C	QTR	RC	LOW
	SQN-2-FCV -067-0219	3	B-ACT	O	QTR	RC	LOW
070 - Component Cooling							
	SQN-1-VLV -070-0671	3	C	O	QTR	RC	LOW
	SQN-1-VLV -070-0676A	3	C	O	QTR	RC	LOW
	SQN-1-VLV -070-0676B	3	C	O	QTR	RC	LOW
	SQN-1-VLV -070-0679	2	AC-ACT	--	QTR	RC	LOW
	SQN-1-VLV -070-0681A	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0681B	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0681C	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0681D	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0682A	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0682B	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0682C	3	C	O	QTR	See RV-1	LOW
	SQN-1-VLV -070-0682D	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0671	3	C	O	QTR	RC	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
070 - Component Cooling (continued)							
	SQN-2-VLV -070-0676A	3	C	O	QTR	RC	LOW
	SQN-2-VLV -070-0676B	3	C	O	QTR	RC	LOW
	SQN-2-VLV -070-0679	2	AC-ACT	--	QTR	RC	LOW
	SQN-2-VLV -070-0681A	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0681B	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0681C	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0681D	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0682A	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0682B	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0682C	3	C	O	QTR	See RV-1	LOW
	SQN-2-VLV -070-0682D	3	C	O	QTR	See RV-1	LOW
072 - Containment Spray							
	SQN-1-VLV -072-0547	2	C	--	DISASSEMBLE	N/A	LOW
	SQN-1-VLV -072-0548	2	C	--	1 VALVE	N/A	LOW
	SQN-1-VLV -072-0555	2	C	--	EACH	N/A	LOW
	SQN-1-VLV -072-0556	2	C	--	RO	N/A	LOW
	SQN-2-VLV -072-0547	2	C	--	DISASSEMBLE	N/A	LOW
	SQN-2-VLV -072-0548	2	C	--	1 VALVE	N/A	LOW
	SQN-2-VLV -072-0555	2	C	--	EACH	N/A	LOW
	SQN-2-VLV -072-0556	2	C	--	RO	N/A	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
077 - Waste Disposal							
	SQN-1-FCV -077-0009	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -077-0010	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -077-0018	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -077-0019	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -077-0020	2	A-ACT	C	QTR	RC	LOW
	SQN-2-FCV -077-0009	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -077-0010	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -077-0018	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -077-0019	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -077-0020	2	A-ACT	C	QTR	RC	LOW
090 - Radiation Monitoring							
	SQN-1-FCV -090-0107	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0108	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0109	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0110	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0111	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0113	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0114	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0115	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0116	2	A-ACT	O	QTR	RC	LOW
	SQN-1-FCV -090-0117	2	A-ACT	O	QTR	RC	LOW

SEQUOYAH RISK INFORMED IST VALVE RECOMMENDATIONS

System	Valve Number	ASME Class	Valve Category	Normal Position	Required Test Interval	New Test Interval	Risk Significance Due to change
090 - Radiation Monitoring (continued)							
	SQN-2-FCV -090-0107	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0108	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0109	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0110	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0111	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0113	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0114	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0115	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0116	2	A-ACT	O	QTR	RC	LOW
	SQN-2-FCV -090-0117	2	A-ACT	O	QTR	RC	LOW