UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE TESTING PROGRAM REQUESTS FOR RELIEF

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

1.0 INTRODUCTION

Section 50.55a of Title 10 of the Code of Federal Regulations (10 CFR 50.55a) requires that inservice testing (IST) of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda, except where relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a(f)(6)(i), (a)(3)(i), or (a)(3)(ii). To obtain authorization or relief, the licensee must demonstrate that (1) conformance is impractical for its facility, (2) the proposed alternative provides an acceptable level of quality and safety, or (3) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Section 50.55a(f)(4)(iv) provides that inservice tests of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed and subject to Commission approval. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provided alternatives to the Code requirements determined to be acceptable to the staff and authorized the use of the alternatives in Positions 1, 2, 6, 7, 9, and 10, provided the licensee follow the guidance delineated in the applicable position. When an alternative is proposed which is in accordance with GL 89-04 guidance and is documented in the IST program, no further evaluation is required; however, implementation of the alternative is subject to NRC inspection.

Section 50.55a authorizes the Commission to grant relief from ASME Code requirements or to approve proposed alternatives upon making the necessary findings. The NRC staff's findings with respect to granting or not granting the relief requested or authorizing the proposed alternative as part of the licensee's IST program are contained in this safety evaluation (SE).

2.0 BACKGROUND

By letter of December 1, 1992, Wolf Creek Nuclear Operating Corporation submitted Relief Request VR-24 for the Wolf Creek Generating Station IST program. VR-24 requested Commission approval to implement OM Part 10 (OM-10) for inservice testing of valves without immediately implementing the

requirements of OM-1 for IST of safety and relief valves. OM-1 is to be incorporated into the IST program at the next interval, beginning in September 1995. By NRC letter dated March 12, 1993, the use of OM-10 for inservice testing of valves without implementation of OM-1 at this time was approved pursuant to 10 CFR 50.55a(f)(4)(iv); the staff noted that the licensee should submit relief requests for any requirements that are determined to be impractical. In its letter of December 14, 1993, the licensee stated that the revision of the IST program to meet the requirements of OM-10 was completed October 13, 1993, with initial testing to the new requirements scheduled for completion by March 31, 1994.

The actions to improve the IST program were taken to address weaknesses identified in Licensee Event Report 50-482/91-007 and NRC violation 50-482/9209-01. In addition to the updated valve testing program, the licensee developed an IST design basis document which identified the testing requirements for each component and the basis for inclusion or exclusion in the IST program. A self-assessment of the IST program was performed and identified discrepancies were resolved. The following valve relief requests have been deleted: VR-1, VR-2, VR-3, VR-4, VR-5, VR-7, VR-8, VR-9, VR-10, and VR-12 through VR-23. New or revised valve relief requests VR-6, VR-11, VR-25, VR-26, and VR-27 are evaluated below against the requirements of OM-10. VR-24, which requested approval to implement OM-10, was approved by NRC's letter of March 12, 1993, as noted above. Pump relief requests were previously evaluated and approved or granted in NRC safety evaluations dated January 15, 1988, March 8, 1989 (PR-14), and September 20, 1989.

The first 10-year interval began September 3, 1985. The original program was based on the requirements of the 1977 Edition with addenda through the Summer 1978 Addenda of Section XI of the ASME Code. The program was revised to meet the requirements of the 1980 Edition with addenda through the Winter of 1981 Addenda of Section XI. The pump IST continues to be performed in accordance with the 1980 Edition, Winter 1981 Addenda, and the valve IST is now in accordance with the requirements of the 1989 Edition of ASME Section XI (which references OM-10), except OM-1, which will be implemented September 1995.

3.0 EVALUATION OF VALVE RELIEF REQUESTS

3.1 Relief Request VR-6

Relief from the testing requirements of Part 10, Section 4.2.1(b) and 4.2.1.8 for valve exercising and stroke time measurements is requested for the diesel air start solenoid valves.

Licensee's Basis for Relief: The licensee stated "Valve Stroke Time cannot be measured. These valves are Solenoid operated and are enclosed with the Solenoid. The valves have no Position Indication Devices. These Air Start Valves are required to start the associated Diesel. Diesel Start Time is affected by Valve Stroke Time. Valve degradation can be detected by ensuring the Diesel comes up to speed in $\leq$ 12 seconds and by observing approximately equal pressure drops in the Starting Air Tanks. Therefore, Diesel Start Time

and Starting Air Tank Pressure changes will provide indication of valve performance."

Licensee's Proposed Alternative Testing: The licensee proposed that proper operation of these valves will be verified by measuring diesel start times and observing starting air tank pressure changes.

Evaluation

The design of the diesel air start system does not include features to enable measurement of the stroke times for the air-start solenoid valves. Therefore, it is impractical to meet the code requirements. The solenoid valves are enclosed, precluding observation of travel, and have no position indicating devices. However, the diesel generator is tested monthly to ensure that the diesel achieves operating speed within 12 seconds. Any test of the diesel that fails the 12-second criterion will require corrective actions, including determination of the condition of the solenoid valves. Additionally, the starting air tank pressure changes will be observed during diesel testing for information on valve performance. Imposition of the code requirements would be a burden on the licensee, necessitating replacement of the valves or design changes to the system.

Conclusion

Pursuant to 10 CFR 50.55a(f)(6)(i), relief is granted to test the diesel air-start solenoid valves by monitoring the diesel start times monthly with acceptance criteria based on the diesel start times, based on the impracticality of performing the stroke time measurement in accordance with Code requirements and the burden on the licensee if the code requirements were imposed. The alternative testing provides adequate assurance of the operational readiness of the valves.

3.2 Relief Request VR-11

An alternative method of performing the position indication verification for the pressurizer safety relief valves is proposed. The test requirement specifies that valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated (Part 10, Section 4.1).

Licensee's Basis for Relief: The licensee stated "If these valves are actuated for the Position Indication Test they need to be retested to ensure the Set Relief Pressure is correct. This involves increased testing and unnecessary radiation exposure to test personnel."

Licensee's Proposed Alternative Testing: The licensee proposed that the valve's lift indicating switch assembly will be detached from the valve spindle. A magnet and a lift indicating switch setting tool will be used to simulate valve OPENING and valve CLOSING position which verifies lift indicating switch assembly position with remote position indication.

Evaluation

The pressurizer safety relief valves provide overpressure protection for the primary system and are self-actuating on increasing pressure. Position indicating devices will inform operators when the valve has opened, though other indications would also make the operator aware that the reactor coolant system pressure is being relieved through the valves (e.g., cessation of increasing pressure). To test the position indicating device on a pressurizer safety valve locally involves opening the valves as installed whether (1) by increasing primary system/pressurizer pressure to the lift setpoint or (2) by using a hydraulic lift device. Lift setpoint testing may be performed using such an assist device, but may also be performed offsite at a test facility. Although the code does not specifically require that after any actuation of the valve, the lift set pressure must be reverified, industry experience has shown that valve seat leakage can occur after valve lift, damaging the valve seat if not repaired expeditiously. Therefore, unnecessary lifts at pressure are avoided. Performing a position indication verification by lifting the valve as installed could necessitate (1) maintenance to perform seat lapping or machining or (2) adjustment of the valve settings, which would require reverification of the lift setpoint. As the licensee indicates in the basis for the proposed alternative, increased testing could result in possibly further damaging the valves, and the unnecessary maintenance would expose test personnel to radiation.

As an alternative to actually lifting the valve, the licensee proposes to simulate valve opening and closing, and observe the lift-indicating switch assembly position and indication at the remote panel. This simulated test will verify that the device is properly indicating the position when the switch is actuated. Under actual operating conditions, the compression of the spring would actuate the switch for indicating valve opening. The simulated test verifies that the indicating system from switch actuation at the valve to the remote indication is working properly. The simulated test therefore meets the intent of the periodic verification requirement. Since the verification can be achieved by the proposed alternative, requiring the licensee to perform the verification by lifting the valve creates a hardship or unusual difficulty without a compensating increase in the level of quality and safety,

Conclusion

The alternative to perform position verification for the pressurizer safety valves by simulating opening and closing and actuating the indicating switch is authorized pursuant to 10 CFR 50.55a(a)(3)(ii), based on the hardship or unusual difficulty without a compensating increase in the level of quality and safety that could result if verification by actual actuation of the valves were required.

3.3 Relief Request VR-25

The containment spray pump suction check valves in the suction line from the refueling water storage tank (RWST) provide suction to the pump on initiation of containment spray in the injection mode following a loss-of-coolant

accident or a main steam line break inside containment. The valves have a safety function in the closed position to prevent highly contaminated water from the containment recirculation sump from returning to the RWST after switching to the recirculation mode following a loss-of-coolant accident. For these valves, the licensee proposes to implement a sampling disassembly and inspection program for verifying the opening and closing capability of the valves. The test requirements of OM-10 are that as an alternative to verifying obturator movement of the check valve disc, disassembly and inspection every refueling outage may be used to verify operability of check valves. Position 2 of GL 89-04 states that when a full-stroke exercise is impractical an acceptable alternative may be used. The guidance in Position 2 allows valves to be grouped such that one valve is disassembled and inspected each outage on an alternating basis with all valves in the group inspected at least once in each 6-year period.

Licensee's Basis For Relief: The licensee stated "It is impractical to stroke open test these valves at any time with flow since this would result in spraying containment. Due to radiation decontamination concerns it is impractical to disassemble both valves every refueling. The valves will be sample disassembled as allowed per OMa-1988 part 10 section 4.3.2.1(c) and Generic Letter 89-04.

"It is also impractical to test these valves closed due to there not being a drain or test line located upstream of the check valve which could be used to measure the leakage rate to determine if the check valve was closed. Due to radiation/contamination concerns it is impractical to disassemble both valves every refueling. Although disassembly is allowed by OMa-1988 part 10, neither OMa-1988 part 10 nor Generic Letter 89-04 discusses sample disassembly verifying closure capability. However, the Minutes Of The Public Meetings On Generic Letter 89-04 states sample disassembly may be acceptable (with relief) depending on whether verification by flow or pressure measurements is practical. It is practical to determine the closed position of the valve by flow or pressure measurements."

Licensee's Proposed Alternative Testing: The licensee proposed that for both open and close verification, these check valves will be partial flow tested quarterly and one valve each outage will be disassembled, inspected, and manually full stroked during each refueling. If the full stroke capability of the disassembled valve is in question, the other valve will be disassembled, inspected, and manually full stroked during the same outage.

Evaluation

Paragraph 4.3.2.4(c) of OM-10 specifies that disassembly of a valve may be used as an alternative to verifying obturator movement by flow, pressure, or other positive means, or by using a mechanical exerciser. Therefore, the alternative method is acceptable in accordance with OM-10 for both opening and closing verification; however, Paragraph 4.3.2.4(c) requires that the disassembly be performed each outage, whereas GL 89-04, Position 2, states: "Where the licensee determines that it is burdensome to disassemble and

inspect all applicable valves each refueling outage, a sample disassembly and inspection plan for groups of identical valves in similar applications may be employed." This allows grouping of similar valves and employing a sampling plan such that one valve of the group is inspected each refueling outage, with any one valve disassembly not to exceed once each 6 years. The subject valves are identical and are installed in two trains of a system such that they each experience the same service. Therefore, one of the two valves should be representative of any degrading phenomena occurring over one cycle of operation, with both valves being disassembled if one indicates a problem. Disassembling either of the valves creates radiation and contamination concerns. It would be a hardship or unusual difficulty without a compensating increase in the level of quality and safety to require the licensee to disassemble both valves each refueling outage when the condition of both valves can be monitored by alternating the inspection (based on the similarities of design and operating/service conditions). Therefore, the grouping and inspection of the two valves may be conducted in accordance with the guidance in Position 2 of GL 89-04, as stated in the relief request.

Conclusion

Disassembly and inspection is an acceptable alternative to other means of verifying obturator movement in accordance with Paragraph 4.3.2.4(c) of OM-10. When disassembly and inspection of both valves is burdensome, a sampling plan may be used pursuant to GL 89-04. Based on the hardship or unusual difficulty that is created by requiring disassembly of both valves each refueling outage, it is acceptable for the licensee to use the guidance of GL 89-04, Position 2, for establishing and implementing a sampling plan for the disassembly schedule. The alternative schedule is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

3.4 Relief Request VR-26

The containment spray check valves in the line from the pump discharge to the spray headers open to allow flow to the spray headers for mitigating the consequences of a loss-of-coolant accident, main steam line break, or a high energy line break inside containment by limiting containment peak pressure. The valves close to maintain containment integrity in the event of a containment spray failure. For these valves, the licensee proposes to implement a sampling disassembly and inspection program for verifying the opening and closing capability of the valves. The test requirements of OM-10 are that as an alternative to verifying obturator movement of the check valve disc, disassembly and inspection every refueling outage may be used to verify operability of check valves. Position 2 of GL 89-04 states that when a full-stroke exercise is impractical an acceptable alternative may be used. The guidance in Position 2 allows valves may be grouped such that one valve is disassembled and inspected each outage on an alternating basis with all valves in the group inspected in each 6-year period.

Licensee's Basis for Relief: The licensee stated "It is impractical to stroke open test these valves at any time with flow since this would result in spraying containment. Due to radiation/contamination concerns it is impractical to disassemble both valves every refueling."

Licensee's Proposed Alternative Testing: The licensee proposed that for both open and close verification, one check valve each outage will be disassembled, inspected, and manually full stroked during each refueling.

Evaluation

Paragraph 4.3.2.4(c) of OM-10 specifies that disassembly of a valve may be used as an alternative to verifying obturator movement by flow, pressure, or other positive means, or by using a mechanical exerciser. Therefore, the alternative method is acceptable in accordance with OM-10 for both opening and closing verification; however, Paragraph 4.3.2.4(c) requires that the disassembly be performed each outage, whereas GL 89-04, Position 2, states: "Where the licensee determines that it is burdensome to disassemble and inspect all applicable valves each refueling outage, a sample disassembly and inspection plan for groups of identical valves in similar applications may be employed." This allows grouping of similar valves and employing a sampling plan such that one valve of the group is inspected each refueling outage, with any one valve disassembly not to exceed once each 6 years. The subject valves are identical and are installed in two trains of a system so they each experience the same service. Therefore, one of the two valves should be representative of any degrading phenomenon occurring over one cycle of operation, with both valves being disassembled if one indicates a problem. Disassembling either of the valves creates radiation and contamination concerns. It would be a hardship or unusual difficulty without a compensating increase in the level of quality and safety to require the licensee to disassemble both valves each refueling outage when the condition of both valves can be monitored by alternating the inspection (based on the similarities of design and operating/service conditions). Therefore, the grouping and inspection of the two valves may be conducted in accordance with the guidance in Position 2 of GL 89-04, as stated in the relief request.

Conclusion

Disassembly and inspection is an acceptable alternative to other means of verifying obturator movement in accordance with Paragraph 4.3.2.4(c) of OM-10. When disassembly and inspection of both valves is burdensome, a sampling plan may be used pursuant to GL 89-04. Based on the hardship or unusual difficulty that is created by requiring disassembly of both valves each refueling outage, it is acceptable for the licensee to use the guidance of GL 89-04, Position 2, for establishing and implementing a sampling plan for the disassembly schedule. The alternative schedule is authorized pursuant to 10 CFR 50.55a (a)(3)(ii).

3.5 Relief Request VR-27

The four subject valves, two each in series in two steam lines, open to provide driving steam to the turbine driver for the auxiliary feedwater pump. The valves also must close in the event of an upstream main steam line break to prevent diversion of steam from the turbine driver. For these valves, the licensee proposes to implement a sampling disassembly and inspection program for verifying the closing capability of the valves. The opening capability will be verified by a partial-flow test quarterly and a full-flow test on a cold shutdown frequency. The test requirements of OM-10 are that, as an alternative to verifying obturator movement of the check valve disc, disassembly and inspection every refueling outage may be used to verify operability of check valves. Position 2 of GL 89-04 states that when a full-stroke exercise is impractical an acceptable alternative may be used. The guidance in Position 2 allows valves to be grouped in such a way that one valve is disassembled and inspection each outage on an alternating basis with all valves in the group inspected in each 6-year period.

Licensee's Basis for Relief: The licensee stated "It is impractical to test these valves closed due to there not being in drain or test line located between either pair of check valves. Although disassembly is allowed by OMa-1988 part 10, neither OMa-1988 part 10, nor Generic Letter 89-04 discusses sample disassembly for verifying closure capability. However, the Minutes Of The Public Meetings On Generic Letter 89-04 states sample disassembly may be acceptable (with relief) depending on whether verification by flow or pressure measurements is practical. It is not practical to determine the close position of these valves by flow or pressure measurements is practical [*sic*]. It is not practical to determine the close position of these valves by flow or pressure measurements."

Licensee's Proposed Alternative Testing: The licensee proposed that for stoke open verification, these check valves will be partial flow tested quarterly and full flow tested during cold shutdowns. For closure verification one valve will be disassembled, inspected, and manually full stroked during each refueling. If the full stroke capability of the disassembled valve is in question, the other valve will be disassembled, inspected, and manually full stroked during the same outage.

Evaluation

Paragraph 4.3.2.4(c) of OM-10 specifies that disassembly of a valve may be used as an alternative to verifying obturator movement by flow, pressure, or other positive means, or by using a mechanical exerciser. Therefore, the alternative method is acceptable in accordance with OM-10 for both the opening and closing verification; however, Paragraph 4.3.2.4(c) requires that the disassembly be performed each outage, whereas GL 89-04, Position 2, states: "Where the licensee determines that it is burdensome to disassemble and inspect all applicable valves each refueling outage, a sample disassembly and inspection plan for groups of identical valves in similar applications may be employed." This allows grouping of similar valves and employing a sampling

plan in which one valve of the group is inspected each refueling outage, with any one valve disassembly not to exceed once each 6 years.

For grouping these four valves, the valves must be identical and experience the same service for closing under normal operating conditions. When two check valves are in series, the valves may, or may not, experience the same service. Therefore, the licensee should ensure that the grouping justification addresses the service conditions. If one of the four valves is disassembled each refueling outage to be representative of any degrading phenomena occurring over one cycle of operation, then all four valves must be disassembled if one indicates a potential generic problem. The proposed alternative states that the "other" valve will be disassembled during the same refueling outage, but Position 2 guidance is that all remaining valves in the group be disassembled in the same outage if a problem is identified with the valve that is scheduled for disassembly. The basis must be revised to clearly indicate the grouping and the number of valves in each group.

Disassembling all four of the valves each refueling outage creates radiation and contamination concerns. It would be a hardship or unusual difficulty without a compensating increase in the level of quality and safety to require the licensee to disassemble all four valves each refueling outage when the condition of the valves can be monitored by alternating the inspection (based on the similarities of design and operating/service conditions). Therefore, the grouping of the valves, as justified based on service conditions, may be conducted in accordance with the guidance in Position 2 of GL 89-04, provided that the licensee corrects the basis of its alternative testing to clearly indicate the grouping of the valves and the number of valves in each group.

Conclusion

Disassembly and inspection is an acceptable alternative to other means of verifying obturator movement in accordance with Paragraph 4.3.2.4(c) of OM-10. When disassembly and inspection of both valves is burdensome, a sampling plan may be used pursuant to GL 89-04. Based on the hardship or unusual difficulty that is created by requiring disassembly of all four valves each refueling outage, it is acceptable for the licensee to use the guidance of GL 89-04, Position 2, for establishing and implementing a sampling plan for the disassembly schedule. The alternative schedule is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

4.0 CONCLUSIONS

The staff evaluated the information provided by Wolf Creek Nuclear Operating Corporation in support of its requests for relief. Based on the information provided, the relief requests and proposed alternatives have been determined to be acceptable, and pursuant to 10 CFR 50.55a(a)(3)(ii) and (f)(6)(i), granting of relief is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. In making this determination, the NRC staff has given due consideration to the burden that could result if those requirements were imposed on your facility.

5.0 COMMENTS ON TEST DEFERRALS

OM-10 includes provisions that allow a licensee to defer valve exercising in a hierarchy. If full-stroke exercising cannot be conducted during power operations, partial-stroke exercising can be performed quarterly, with full-stroke exercising at cold shutdown conditions. If neither partial- or full-stroke exercising can be performed during power operations, then exercising can be deferred to cold shutdowns. If full-stroke exercising is impractical during power operations and cold shutdowns, partial-stroke exercising can be performed during cold shutdowns and full-stroke exercising can be performed during refueling outages. If exercising is impractical at conditions other than refueling, the exercising may be deferred to refueling outages. These provisions are included in Paragraphs 4.2.1.2 and 4.3.2.2 for Category A and B valves, and Category C valves, respectively. The test deferrals were reviewed and certain discrepancies were identified as described below. The licensee should evaluate whether any changes are necessary.

TEST DEFERRALS - Paragraph 6.2, "Test Plans," of OM-10 requires that the justification for deferral of stroke testing of valves be included in the IST plan. The program document currently includes the test deferrals in the notes at the end of the valve table. While this is an acceptable option for the format, the "Notes" should include the valve numbers and the safety function(s) as well as the information justifying the deferral. Each such note should be identified as a test deferral (e.g., Note 2. Test Deferral:). Additionally, the program document could be enhanced if the function of each of the valves were identified in the valve table, particularly since the program does not include system drawings (e.g., "Main steam to auxiliary feedwater turbine driver").

NOTE 9 - Valve V0084 is a 2-inch Class 1 check valve in the reactor coolant system. Note 9 indicates that this valve is considered passive because it is in series with a normally closed non-safety-related air-operated valve and is not required to change positions to perform a safety-related function. Check valves are generally considered active valves unless the flow is blocked. A normally-closed, non-safety-related air-operated valve would not be considered as "blocking" flow, even if motive power were disabled. For example, during a seismic event, the air-operated valve may not be available to block flow through this line. The licensee should reevaluate whether check valve V0084 is a passive valve for IST purposes.

NOTE 30 - In noting that the exercising of emergency core cooling system valves during power operations would violate technical specifications, the licensee should reference the section of technical specifications rather than giving a general reference to "technical specifications." This recommendation applies to other notes as well.

NOTE 48 - The justification for test deferral refers to Relief Request VR-3 ("using the same logic applied in VR-3"); however, VR-3 has been deleted.

NOTES 61, 63, 65, and 67 - The requirements of IWV-3522 were discussed in the referenced Minutes of Public Meetings on GL 89-04. The requirements of OM-10 differ and the reference is not applicable to OM-10 requirements. The test deferral justification is inappropriate and may be unnecessary to meet the requirements of OM-10.

NOTE 62 - Valves EP-8818A/B/C/D are listed in this note but may not be applicable valves. This discrepancy should be corrected.

NOTE 70 - This note may not be applicable to valves EN-V004 and V-0010. The discrepancy should be corrected.

NOTE 74 - The apparent discrepancy in the applicable valve number should be corrected.

Attachment: Summary of Test Deferrals

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Date: February 22, 1995

Table 1
Summary of Test Deferrals

NOTE: Not all "Notes" are test deferrals.

Note Number	Applicable Valves	Justification	NRC Comments
Note 2	Main and Reheat Steam HV-0011/0014/0017/0020	Closure of the main steam isolation valves during unit operation could result in reactor trip and safety injection actuation which would introduce a severe transient in the main steam lines which is unacceptable from an operational viewpoint. Testing by isolating each main steam header is also possible but would cause a power reduction which is also unacceptable from an operational viewpoint. These valves will be partially stroked every three months and full-stroke tested during cold shutdown.	The justification is adequate for deferral of the full-stroke exercising to cold shutdowns; however, NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Bases section for Surveillance Requirement SR-3.7.2.1, indicates that main steam isolation valves should not be tested at power, since even a part-stroke exercise increases the risk of a valve closure when the unit is generating power.
Note 5	Main Feedwater System FV-0039/40/41/42 V-0120/121/122/123	During normal operation, exercising these valves would be impractical. Closing these valves during operation would isolate feedwater to the steam generators which could result in a severe transient, possibly causing a unit trip. Valves FV-39, 40, 41, and 42 will be partial-stroke tested during normal operation while the remaining testing on all the valves pertaining to this note will be performed during cold shutdown.	The justification is adequate for deferral of the full-stroke exercising to cold shutdowns; however, NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Bases section for Surveillance Requirement SR-3.7.3.1, indicates that main feedwater isolation valves should not be tested at power, since even a part-stroke exercise increases the risk of a valve closure when the unit is generating power.

Note Number	Applicable Valves	Justification	NRC Comments
Note 6	Main Feedwater System V-0124/125/126/127 Auxiliary Feedwater System V-0030/33/36/42/45 V-0054/57/62/67/72	Exercising these valves during normal operation would introduce cold auxiliary feedwater into the steam generators and therefore would cause an unnecessary thermal shock to the auxiliary feed nozzles. Valve testing will be done during cold shutdown.	The concern of thermal shock to feedwater nozzles is sufficient justification to defer testing to cold shutdowns.
Note 8	Reactor Coolant System PV-8702A/B Residual Heat Removal System - HV-8701A/B	These valves have an interlock which prevents their opening when reactor coolant system pressure is above 360 psig. Valve testing will be performed during cold shutdown.	These valves isolate the high pressure reactor coolant system from the low pressure residual heat removal system and cannot be stroked tested during power operations. The power controls are interlocked to prevent valve opening, and thus minimize the possibility of an intersystem loss-of-coolant accident.
Note 10	Reactor Coolant System PCV-0455A/B	The power-operated relief valves (PORVs) have a history of failures and should not be challenged at power. Valve testing will be performed during cold shutdown.	The test deferral is consistent with NRC guidance for surveillance testing of the PORVs given in GL 90-06, "Resolution of Generic Issue 70, 'Power-Operated Relief Valve and Block Valve Reliability,' and Generic Issue 94, 'Additional Low-Temperature Overpressure Protection for Light-Water Reactors.' Note that if the PORVs are leaking, the block valves must be maintained closed and would not be inservice testing quarterly (reference TS 4.4.4.2).

Note Number	Applicable Valves	Justification	NRC Comments
Note 11	Reactor Coolant System HV-0013/14/15/16	Failure of these valves in the closed position during normal operation would inhibit flow to the reactor coolant pump thermal barriers. This is not desirable during pump operation. Valve testing will be performed during cold shutdown.	Due to the sensitivity of reactor coolant pump thermal barriers to temperature transients when cooling is interrupted, the justification for deferring testing is adequate.
Note 12	Reactor Coolant System HV-8351A/B/C/D	Failure of these valves in the closed position during normal operation would inhibit flow to the reactor coolant pump seals which could damage the reactor coolant pump seals. Valve testing will be performed during cold shutdown.	Due to the sensitivity of reactor coolant pump seals to temperature transients when cooling is interrupted, the justification for deferring testing is adequate.
Note 13	Reactor Coolant System HV-8001A/B HV-8002A/B	Stroking these valves during normal operation is impractical. Exercising these valves would allow discharge of uncontrolled radiological releases since the system is vented to containment atmosphere. Also, exercising the "inside" valve at power tends to burp the system which would possibly unseat the closed valve, thus limiting any maintenance activity if problems occur with the valves. Furthermore, failure of any one of these valves in the open position would reduce the system to single-valve protection between the reactor coolant system and containment atmosphere. Valve testing will be performed during cold shutdown.	These valves are the reactor vessel head vent valves and are Target Rock pilot-assisted, directional-dependent, solenoid-operated valves. The HV-8002 valves are in series with the HV-8001 valves (two valves in each of two trains A and B). Opening the inside valve for testing during power conditions can cause the outer valve to unseat for a brief period ("burp" open and then reclose) due to the pressure spike. If the outer valve failed to reclose, there would be only one valve at a reactor coolant system boundary. Therefore, testing these valves during cold shutdown rather than quarterly is justified.

Note Number	Applicable Valves	Justification	NRC Comments
Note 14	Chemical and Volume Control System HV-8100/8112	Failure of one of these valves in the closed position during normal operation would result in a loss of seal water flow to the reactor coolant pumps and could cause pump seal damage. Valve testing will be performed during cold shutdown.	Due to the sensitivity of reactor coolant pump seals to temperature transients when cooling is interrupted, the justification for deferring testing is adequate.
Note 15	Chemical and Volume Control System HV-8152/8160	Failure of one of these valves in the closed position during normal operation would result in loss of pressurizer level control and may cause plant shutdown. Valve testing will be performed during cold shutdown.	The charging system is in service continuously during power operations to maintain reactor coolant system chemistry and inventory. Deferring testing to cold shutdowns is acceptable to preclude loss of pressurizer level control and possible plant shutdown that could occur by testing these valves.
Note 16	Auxiliary Turbines FCV-001/2/3/24/25	Full-stroke exercising these valves requires full flow from the turbine-driven auxiliary feedwater pump. Obtaining full flow with this pump during normal operations would cause thermal shocking of the steam generator feedwater nozzles due to the injection of cold water. This is highly undesirable. The valves will be partial stroked quarterly and full stroked during cold shutdowns.	These valves are in the steam supply to the auxiliary feedwater pump turbine driver. Full flow through the valves can only be assured by full-flow testing the auxiliary feedwater pump. Such a test is impractical to perform quarterly without subjecting the feedwater nozzles to a thermal shock. During the quarterly testing of the pump, the valves are partial-stroke exercised. Full-stroke exercising will be performed during cold shutdowns.

Note Number	Applicable Valves	Justification	NRC Comments
Note 17	Chemical and Volume Control System HV-8105/8106	Closure of one of these valves during normal operation would isolate charging flow to the reactor coolant system which could result in loss of pressurizer level control and cause plant shutdown. Valve testing will be performed during cold shutdown.	The charging system is in service continuously during power operations to maintain reactor coolant system chemistry and inventory. Deferring testing to cold shutdowns is acceptable to preclude loss of pressurizer level control and possible plant shutdown that could occur by testing these valves.
Note 18	Chemical and Volume Control System LCV-0112B/C	The normal charging pumps' suction would be isolated upon closure of one of these valves during normal operation. Alternate suction flow paths (e.g., aligned with the refueling water storage tank) would cause a sudden increase in reactor coolant system boron inventory, and thereby, a plant transient. Also, seal water injection to the reactor coolant pumps would be inhibited which could result in damage to the seals. Valve testing will be performed during cold shutdown.	The charging system is in service continuously during power operations to maintain reactor coolant system chemistry and inventory. Isolating the normal suction would cause a transient on the reactor coolant system. Deferring testing to cold shutdowns is acceptable to preclude the chemical transient, and possible plant transient, that could occur by testing these valves at power operations.
Note 19	Chemical and Volume Control System VO-174	Testing this valve during normal operation would introduce boric acid to the primary side causing unwanted negative reactivity addition. Valve testing will be performed during cold shutdown.	Deferring testing of this valve is acceptable to preclude introduction of boric acid to the reactor coolant system which could cause a plant transient.
Note 20	Residual Heat Removal System HV-8716A/B	Closure or failure of either EJ HV-8716A or B would render both trains of the residual heat removal system inoperable and would require plant shutdown. The valves will be full-stroke exercised during cold shutdowns.	The test deferral is consistent with NRC guidance that valves should not be tested if the testing causes loss of a total system function.

Note Number	Applicable Valves	Justification	NRC Comments
Note 21	Refueling Water Storage HV-8813	Failure of this valve in the closed position during normal operation could cause a failure of both safety injection pumps by isolating the miniflow recirculation path for both pumps. Valve testing will be performed during cold shutdown.	The test deferral is consistent with NRC guidance that valves should not be tested if the testing causes loss of a total system function.
Note 22	Refueling Water Storage LCV-0012D/E	Failure of these valves in the open position during normal operation could result in introduction of borated water into the reactor coolant system which could possibly cause plant shutdown. Valve testing will be performed during cold shutdown.	Deferral of testing this valve is acceptable to preclude introduction of boric acid to the reactor coolant system which could cause a plant transient.
Note 27	Residual Heat Removal System HV-8804A/B	EJ HV-8804A and B have control interlocks with BN-8813 which is required per technical specifications to remain open during power operations. Closing this valve would render both emergency core cooling system trains inoperable and would require initiation of shutdown. These valves will be exercised during cold shutdowns.	The test deferral is consistent with NRC guidance that valves should not be tested if the testing causes loss of a total system function.
Note 28	Residual Heat Removal System HV-8809A/B HV-8840	These valves have their power removed during normal operation so that the emergency core cooling system flowpath can be maintained operable per technical specifications. Valve testing will be performed during cold shutdown.	Testing these valves quarterly would require power to be restored, violating plant technical specifications. Therefore, deferring testing to cold shutdowns is acceptable.
Note 29	Accumulator Safety Injection HV-8808A/B/C/D	These valves are locked open with power removed during normal operation with reactor coolant system pressure above 1000 psig as required by technical specifications. Valve testing will be performed during cold shutdown.	These valves are locked open so that inadvertent closure will not occur. Closing any one of these valves would defeat the capability of injection from the associated accumulator and is prohibited by plant technical specifications and safety analysis.

Note Number	Applicable Valves	Justification	NRC Comments
Note 30	High Pressure Coolant Injection HV-8835	Failure of this valve in the closed position during normal operation could inhibit a portion of the emergency core cooling system. Closing EM HV-8835 would render both safety injection trains inoperable. This valve is required to remain open, with power removed from the valve operator, per plant technical specifications. Exercising the valve would violate technical specifications. Valve testing will be performed during cold shutdowns.	This valve is the isolation valve for safety injection flow to the reactor coolant system cold legs. Power to the valve actuator is removed during plant operations and closing this valve is prohibited by technical specifications. Therefore, testing during cold shutdown conditions is acceptable.
Note 31	Reactor Coolant System V-443/444/445 V-446/447/448 V-449/550	Exercising of these valves during normal operation would result in interruption of component cooling water flow to the reactor coolant pumps thermal barrier cooling coil. Valve testing will be performed during cold shutdown.	Due to the sensitivity of reactor coolant pump thermal barriers to temperature transients when cooling is interrupted, the justification for deferring testing is adequate.
Note 33	Residual Heat Removal 8730A/B	A full-stroke exercise of these valves during normal operations is not possible since these valves cannot open against reactor coolant system pressure. The flow path back to the refueling water storage tank would require opening BN-8717. Opening this valve and throttling a residual heat removal (RHR) pump discharge valve would make both trains of the RHR system inoperable since the RHR system could no longer provide adequate emergency core cooling flow upon initiation of a safety injection signal. Valves will be partial stroked quarterly and full stroked during cold shutdowns.	The test deferral is consistent with NRC guidance that valves should not be tested if the testing causes loss of a total system function.

Note Number	Applicable Valves	Justification	NRC Comments
Note 34	Residual Heat Removal HV-8811A/B	Testing of these valves during normal operation is impractical. Failure of the valves during normal operation would render the associated RHR train inoperable. Failure of either EJ HV-8811A or B in the open position would violate technical specifications which would require initiation of plant shutdown. Furthermore, access to these valves is limited due to the valves being located inside an encapsulation tank. Maintenance on these valves would require the plant to be shutdown. Valve testing will be performed during cold shutdown.	Testing one valve in a train would make only one train inoperable and not the entire system. Even when testing requires entry into a limiting condition of operation for one train of a system, the technical specification allowable outage time for the train has been established considering surveillance of the equipment. However, because the valves are essentially inaccessible, a failure of one of the valves during testing could result in a plant shutdown to make repairs. Therefore, it is acceptable to defer testing.
Note 35	Containment Spray System HV-0001/0007	Testing of these valves during normal operation is impractical. Opening valve during operation would run the risk of draining the containment spray pumps suction headers into the containment sump which could cause severe damage to the pumps and render them inoperable.	It is acceptable to defer testing to preclude draining the suction of the containment spray pumps.
Note 39	Accumulator Safety Injection HV-8950A/B/C/D/E/F	Valve testing during normal operation is impractical. Failure of these valves in the open position would represent a major loss of safety equipment which would force the plant into shutdown. There is no manual backup valve for these valves and if one of the valve failed open it would render the associated accumulator inoperable which would put the plant into a one-hour action statement. Testing will be performed during cold shutdown.	The test deferral is acceptable to preclude loss of the accumulator function if a valve fails to reclose when tested during power operation. Opening of any one of these valves vents the associated accumulator directly to containment atmosphere.

Note Number	Applicable Valves	Justification	NRC Comments
Note 40	Compressed air KA-FV-0029	Failure of this valve in the closed position, or exercising the valve through a full stroke, during normal plant operation would interrupt the supply of instrument air to valves and equipment necessary for system control and operation. Interruption of air supply would cause loss of normal letdown capability, loss of pressurizer pressure and level control, loss of spray control capability and normal charging capability, which could result in reactor trip, safety injection initiation, overpressurization of the reactor coolant system (RCS), thermal shock of RCS piping, plant transients and consequently plant shutdown. Testing will be performed during cold shutdown.	Stroking the valve would isolate the air supply to various pneumatically-operated components, many of which are valves maintained in an open or closed position by air but fail on loss of air to the "fail-safe" position. The change of position for certain of these valves would result in various system transients, ultimately causing a plant trip. Deferral of testing to cold shutdowns is acceptable to preclude such a transient.
Note 45	Residual Heat Removal System 8814A/B Accumulator Safety Injection 8818A/B/C/D	Exercising these valves to the open direction during power operation cannot be done due to the residual heat removal system not being able to overcome reactor coolant system pressure. Valve testing will be performed during cold shutdown.	Full-stroke exercising of these check valves requires safety injection/residual heat removal flow into the reactor coolant system. Such testing cannot be performed during power operations and must be deferred to cold shutdown.
Note 48	Main and Reheat Steam V-0345/0346/0347/0348 Auxiliary Feedwater System V-0149/150/151/152 Reactor Coolant System 8378A/B, 8379A/B	These valves are required to be exercised closed quarterly. To accomplish this, the air supply must be physically disconnected. Using the same logic applied in VR-3, the CVT-C (check valve exercise to the closed position) will be performed every two years in conjunction with the AT-3 (air accumulator check valve test).	The justification needs to be rewritten. Relief Request VR-3 has been deleted. The basis for previous VR-3 was that it was impractical to verify the closure capability of certain valves other than by leak-rate testing which was done each refueling outage. While this basis may be applicable to the valves in Note 48, the justification should be so stated.

Note Number	Applicable Valves	Justification	NRC Comments
Note 50	Reactor Coolant System 8378A/B 8379A/B	Exercising these valves during power operation is impractical due to thermal transients induced on the auxiliary charging nozzle and on the auxiliary charging piping during switchover from normal to alternate charging. Valve testing will be performed during cold shutdown.	Creating thermal cycles on nozzles and piping can cause damage; therefore, it is acceptable to defer testing of these valves to cold shutdown.
Note 54	Chemical and Volume Control System BG-8481A/B	These valves will be partial-stroke exercised quarterly and full-stroke exercised during refueling outages. Full stroke exercising during normal operation would require injecting borated water into the RCS which could cause a power decrease. Furthermore, full-flow exercising of these valves cannot be performed during power operations or cold shutdown due to the existence of insufficient volume expansion to accommodate the flow required for testing. Full-stroke exercising during cold shutdown could also cause cold overpressurization of the RCS. Full-flow testing of these valves requires reactor head removal.	Deferral of full-stroke exercising is necessary due to the design of the system, with partial-stroke exercising quarterly at less than full flow.
Note 55	Chemical and Volume Control System BG-8481A/B	These valves will be tested closed during cold shutdowns. Testing of these valves required cross connecting both trains of charging which is not allowed per Technical Specification 3.5.2 in modes 1, 2, and 3, since it requires voluntarily entering Technical Specification 3.0.3.	Technical Specification 3.0.3 requires plant shutdown to proceed in one hour. Testing these valves would place the plant in such a condition which is not allowed by the technical specifications during power operations; therefore, deferral of testing is necessary.
Note 56	Reactor Coolant System BB-V118, BB-V148, BB-V-178, BB-V208	These valves will be tested closed during cold shutdowns. Testing these valves quarterly would be burdensome since this would require securing reactor coolant pump seal water flow which would increase the probability of a loss-of-coolant accident.	Due to the sensitivity of reactor coolant pump seals to temperature transients when cooling is interrupted, the justification for deferring testing is adequate.

Note Number	Applicable Valves	Justification	NRC Comments
Note 57	Compressed Air System KA-V204, KA FV-29	These valves will be tested closed during cold shutdowns. Testing during power operation would result in loss of instrument air to containment which could cause a plant trip.	Stroking these valves could isolate the air supply to various pneumatically-operated components, many of which are valves maintained in an open or closed position by air but fail on loss of air to the "fail-safe" position. The change of position for certain of these valves would result in various system transients, ultimately causing a plant trip. Deferral of testing to cold shutdowns is acceptable to preclude such a transient.
Note 58	Chemical and Volume Control System BG-8381	This valve will be tested closed during cold shutdowns. Testing during power operation would require securing normal charging which would cause a plant trip.	Switching to alternate charging could create a plant transient, and possibly a plant trip. Test deferral is appropriate to preclude such an upset condition.
Note 59	Component Cooling Water System EG-V204	This valve will be tested closed during cold shutdowns. Testing during power operation could damage the reactor coolant pumps and would increase the probability of a loss-of-coolant accident.	Due to the sensitivity of reactor coolant pump seals to temperature transients when cooling is interrupted, the justification for deferring testing is adequate.

Note Number	Applicable Valves	Justification	NRC Comments
Note 60	Reactor Coolant System BB-V001, BB-V022, BB-V040, BB-V059 High Pressure Coolant Injection EM8815 Chemical and Volume Control System BG-8546A/B	These valves will be full-stroke open tested during refueling outages. Full-stroke exercising during normal operation would require injecting borated water into the RCS which could cause a power decrease. Furthermore, partial- or full-flow exercising of these valves cannot be performed during power operations or cold shutdowns due to the existence of insufficient volume expansion to accommodate the flow required for testing. Full-stroke exercising during cold shutdowns could also cause cold overpressurization of the RCS. Full-flow testing of these valves requires reactor head removal.	The only plant condition that allows flow testing of these valves is with the reactor vessel head removed during refueling outages. Therefore, test deferral is appropriate.
Note 61	Reactor Coolant System BB-V001, BB-V022, BB-V040, BB-V059 High Pressure Coolant Injection EM8815 Chemical and Volume Control System BG-8546A/B	These valves will be tested closed during refueling outages. A valve which has a safety function in both the open and closed direction is to be exercised to the open and closed direction is to be exercised to the open position and then be verified to close (Minutes of Public Meetings on GL 89-04). Except during refueling outages, it is impractical to exercise these valves open to verify they will close (see Note 60 for opening testing).	The Minutes of the Public Meeting on GL 89-04 (October 1989) related to the code requirements in IWV-3522. Using OM-10, the discussion in the minutes is inappropriate. OM-10 requires that a check valve be exercised to the closed, full-open, or partially open position required to fulfill its safety function. The justification for this test deferral is inappropriate.

Note Number	Applicable Valves	Justification	NRC Comments
Note 62	Residual Heat Removal System - EJ-8841A/B Reactor Coolant System BB-8949B/C Accumulator Safety Injection EP-8818A/B/C/D	These valves will be full-stroke open tested during cold shutdowns. These valves cannot be exercised open during power operation due to system pressure not being able to overcome RCS pressure.	Valves EP-8818A/B/C/D are listed in the note, but the valve table does not reference this note for the "open" testing, referencing instead Note 45. The licensee should resolve this discrepancy. For the remaining valves, the test deferral is necessary due to the unavailability of a flow path during power operating conditions.
Note 63	Residual Heat Removal System - EJ-8841A/B Reactor Coolant System BB-8949B/C Accumulator Safety Injection EP-8818A/B/C/D	These valves will be tested closed during cold shutdowns. A valve which has a safety function in both the open and closed direction is to be exercised to the open position and then be verified to close (Minutes of Public Meetings on GL 89-04). Except during cold shutdowns, it is impractical to exercise these valves open to verify they will close (see Note 62 for opening testing).	The Minutes of the Public Meeting on GL 89-04 (October 1989) related to the code requirements in IWV-3522. Using OM-10, the discussion in the minutes is inappropriate. OM-10 requires that a check valve be exercised to the closed, full-open, or partially open position required to fulfill its safety function. The justification for this test deferral is inappropriate.
Note 64	Reactor Coolant System BB-8948A/B/C/D BB8949A/D High Pressure Coolant Injection System EMV001/2/3/4 Accumulator Safety Injection EPV010/020/030/040	These valves will be full-stroke open tested during refueling outages. These valves cannot be exercised open during power operation due to system pressure not being able to overcome RCS pressure. In cold shutdown, Technical Specification 3.5.4 requires both safety injection pumps to be isolated from the RCS; therefore, there is no practical method for testing these valves during cold shutdowns.	For quarterly testing, the test deferral is necessary due to the unavailability of a full-flow path during power operating conditions. During cold shutdown, low-temperature, overpressure protection concerns preclude operation of the high pressure injection pumps. Test deferral is justified.

Note Number	Applicable Valves	Justification	NRC Comments
Note 65	Reactor Coolant System BB-8948A/B/C/D BB8949A/D High Pressure Coolant Injection System EMV001/2/3/4 Accumulator Safety Injection EPV010/020/030/040	These valves will be tested closed during cold shutdowns. A valve which has a safety function in both the open and closed direction is to be exercised to the open position and then be verified to close (Minutes of Public Meetings on GL 89-04). Except during cold shutdowns, it is impractical to exercise these valves open to verify they will close (see Note 64 for opening testing).	The Minutes of the Public Meeting on GL 89-04 (October 1989) related to the code requirements in IWV-3522. Using OM-10, the discussion in the minutes is inappropriate. OM-10 requires that a check valve be exercised to the closed, full-open, or partially open position required to fulfill its safety function. The justification for this test deferral is inappropriate.
Note 66	Accumulator Safety Injection EP-8956A/B/C/D	These valves will be full-stroke open tested during refueling outages. These valves cannot be exercised open during power operation due to system pressure not being able to overcome RCS pressure. These valves cannot be partial- or full-stroke open exercised during cold shutdown due to cold overpressurization concerns.	There is no flow path available to exercise these check valves at plant conditions other than refueling outages. During power operations, flow cannot be injected into the RCS. During cold shutdowns, a flow path is unavailable due to low-temperature, overpressurization concerns. Test deferral is justified.

Note Number	Applicable Valves	Justification	NRC Comments
Note 67	Accumulator Safety Injection EP-8956A/B/C/D	These valves will be tested closed during refueling outages. A valve which has a safety function in both the open and closed direction is to be exercised to the open position and then be verified to close (Minutes of Public Meetings on GL 89-04). Except during refueling outages, it is impractical to exercise these valves open to verify they will close (see Note 66 for opening testing).	The Minutes of the Public Meeting on GL 89-04 (October 1989) related to the code requirements in IWV-3522. Using OM-10, the discussion in the minutes is inappropriate. OM-10 requires that a check valve be exercised to the closed, full-open, or partially open position required to fulfill its safety function. The justification for this test deferral is inappropriate.
Note 68	High Pressure Coolant Injection EM-8922A/B, EM-8926A/B	These valves will be partial-stroke open exercised quarterly and full-stroke exercised during refueling outages. These valves cannot be exercised open during power operation due to system pressure not being able to overcome RCS pressure. In cold shutdown, Technical Specification 3.5.4 requires both safety injection pumps to be isolated from the RCS; therefore, there is no practical method for testing these valves during cold shutdowns.	There is no flow path available to exercise these check valves at plant conditions other than refueling outages. During power operations, flow cannot be injected into the RCS. During cold shutdowns, the high pressure injection pumps cannot be operated to provide a flow of water due to low-temperature, overpressurization concerns.
Note 69	High Pressure Coolant Injection EM-8926A/B	These valves will be tested closed during cold shutdowns. Testing these valves closed requires isolating the RWST which during power operation would require voluntarily entering Technical Specification 3.0.3.	Because the refueling water storage tank must be available during power operations as a supply of borated water in the event of a loss-of-coolant accident, testing these valves cannot be performed quarterly. Test deferral is necessary.

Note Number	Applicable Valves	Justification	NRC Comments
Note 70	Containment Spray System EN-V002/4/8/10 NOTE: The note lists EN-V004 and V0010; however, the valve table does not list Note 70 for these valves. Note 76 addresses the opening function of these valves. This discrepancy should be resolved.	These valves will be open tested during refueling outages by disassembly. A different valve will be disassembled, inspected, and manually full-stroked during each refueling. If the full-stroke capability of the disassembled valve is in question, the other valve will be disassembled, inspected, and manually full-stroked during the same outage in accordance with Generic Letter 89-04. Stroke-open testing of these valves would require installing temporary piping and flooding the containment recirculation sump with contaminated water. It is not practical to test these valves except during refueling outages, because of the radiation exposure and limited time (due to Technical Specification 3.5.2).	When flow testing is impractical, an alternative acceptable to the staff, and allowed by OM-10, is to perform disassembly and inspection. GL 89-04, Position 2, delineates the guidance for establishing groups of valves to employ a sampling disassembly and inspection on a rotating basis. GL 89-04 granted relief for implementing such a program, provided the guidance so delineated is followed and the alternative is documented in the IST program. Verification that the program complies with the guidance in Position 2 is subject to NRC inspection. Deferring the disassembly and inspection to refueling outages is appropriate due to the impracticality of performance during other plant conditions.
Note 71	Residual Heat Removal System EJ-8969A/B	These valves will be full-stroke open tested during refueling outages. Full- or partial-stroke opening of these valves during normal operations would require stroking of EJ HV-8804A/B. Valves EJ-8804A/B controls are interlocked with BN-8813 which is required by plant technical specifications to remain open during power operations. Closing BN-8813 would require voluntarily entering Technical Specification 3.0.3, which would require plant shutdown to proceed within 1 hour. Full- or partial-stroke testing these valves during cold shutdowns is impractical because it requires reactor head removal.	These check valves cannot be exercised without stroking valves HV-8804A/B which cannot be closed during power operations (see Note 27 above). During cold shutdowns, testing is impractical. Only during refueling outages when the reactor vessel head is removed can these valves be flow tested. Test deferral is necessary.

Note Number	Applicable Valves	Justification	NRC Comments
Note 72	Residual Heat Removal System EJ-8958A/B	These valves will be partial-stroke exercised quarterly and full-stroke exercised during refueling outages. These valves cannot be full-flow exercised open during power operation due to system pressure not being able to overcome RCS pressure. Furthermore, full-flow exercising of these valves cannot be performed during cold shutdown due to the existence of insufficient volume expansion to accommodate the flow required for testing.	Insufficient flow is available during power operations and cold shutdown to full-stroke exercise these check valves. Therefore, partial-stroke exercising quarterly and full-stroke exercising during refueling outages is acceptable.
Note 73	Residual Heat Removal System EJ-8958A/B	These valves will be tested closed during cold shutdowns. Testing these the valves closed during power operations requires isolating the refueling water storage tank which would require voluntarily entering Technical Specification 3.0.3 and a 1-hour action statement.	As noted in Note 72 above, these valves are exercised to verify the opening capability quarterly and during refueling outages. Closure capability is verified during cold shutdown conditions when the RWST can be isolated. Test deferral is justified.
Note 74	Chemical and Volume Control System BG-V035	Testing valve BG-V-035 requires securing letdown. Because letdown normally operates during power operations, BG-V035 will be tested open during cold shutdown.	It is unclear which valve is covered in this note. It does not appear that the valve table references this note for any valve, and the two numbers in the note are not the same. Neither "BG-V-035" nor BG-V-305" are included in the valve table. This discrepancy should be resolved.
Note 75	Emergency Fuel Oil JE-V007 and JE-V008	Testing these valves open would cross connect the trains of the diesel fuel oil transfer system. Because these trains should not be cross connected during power operations, the valves will be exercised during cold shutdown.	Cross connecting the two trains of fuel oil would challenge the separation requirements and place both trains in a potential inoperable condition; therefore, deferral of testing is appropriate.

Note Number	Applicable Valves	Justification	NRC Comments
Note 76	Containment Spray EN-V004/10	These valves are partial-stroked quarterly. The valves will be grouped for verifying the capability to full-stroke by disassembly and inspection during refueling outages on a rotating basis. If the full-stroke capability of the disassembled valve is in question, the other valve will be disassembled, inspection, and manually full-stroke exercised during the same outage. The sampling disassembly and inspection will be in accordance with GL 89-04 guidance.	When flow testing is impractical, an alternative acceptable to the staff, and allowed by OM-10, is to perform disasssembly and inspection. GL 89-04, Position 2, delineates the guidance for establishing groups of valves to employ a sampling disassembly and inspection on a rotating basis. GL 89-04 granted relief for implementing such a program, provided the guidance so delineated is followed and the alternative is documented in the IST program. Verification that the program complies with the guidance in Position 2 is subject to NRC inspection. Deferring the disassembly and inspection to refueling outages is appropriate due to the impracticality of performance during other plant conditions.