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for the
U.S. Department of Energy

Prepared for
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INFORMAL REPORT

RECOMMENDATIONS TO THE NRC FOR THE SAFETY EVALUATION REPORT OF INDIAN POINT STATION - UNIT 2

INSERVICE TESTING PROGRAM

T. RESTIVO, V. LETTIERI, AND R.E. HALL

DATE PUBLISHED - SEPTEMBER 1979

DEPARTMENT OF NUCLEAR ENERGY BROOKHAVEN NATIONAL LABORATORY
UPTON, NEW YORK 11973

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Recommendations to the NRC for the Safety Evaluation Report of Indian Point Station - Unit 2 Inservice Testing Program

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Engineering and Advanced Reactor Safety Division
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TABLE OF CONTENTS

Executive Summary..... 1

1.0 Pumps, Inservice Testing Program..... 2

2.0 Valves, Inservice Testing Program..... 11

3.0 Cold Shutdown Testing of Valves..... 42

4.0 Program Breakdown..... 50

5.0 Miscellaneous Comments..... 63

Conclusion..... 65

Brookhaven National Laboratory
Recommendations to the NRC for the
Safety Evaluation Report of
Indian Point Station, Unit 2
Consolidated Edison Company of New York, Inc.
Inservice Testing Program
For the November 1, 1977 - June 30, 1979 Period
(Docket No. 50-247)

(Submittal dated August, 1977)

Executive Summary

Under contract to the Nuclear Regulatory Commission (NRC), the Reactor Engineering Analysis Group of Brookhaven National Laboratory (BNL) has conducted a review of the following Indian Point, Unit 2, Inservice Testing Program submittals:

1. Inservice Inspection and Testing Program, Indian Point Nuclear Generating Unit No. 2, dated August 1977.

2. Inservice Inspection and Testing Program, Supplements Nos. 1, 2, and 3, dated respectfully September 1977, October 1977, and February 1979.

The BNL review process culminated with the Safety Evaluation Review (SER) meeting held at the Indian Point, Unit 2, plant on March 7, 8, and 9, 1979. Attendees were personnel from the plant, NRC, and BNL. Mr. T.J. Restivo (consultant to BNL) and Mr. V. Lettieri (BNL) represented BNL.

The recommendations made in this report are based on evaluations which considered: Practicality within limitations of equipment design and geometry, requirements of Section XI of the 1974 Edition thru Summer of 1975 of the ASME Boiler and Pressure Vessel Code, 10 CFR 50.55a(g), NRC Staff Guidance Letters (November 1976 and January 1978), and topics of numerous NRC Staff/BNL briefings.

The licensee has requested that Code relief be granted for 15 pump test items and 48 valve items. Also that, Cold Shutdown Testing be approved for 32 valves.

This report recommends that Code relief be granted for 11 of the 15 pump items and 26 of the 48 valve items.

Also recommended is that Cold Shutdown Testing be approved for all except one of the valves against which this request was made.

1840 247

1.0 PUMPS - INSERVICE TESTING PROGRAM

1.1 General

1.1.1 Relief Request: (Reference, paragraph 2.1 - supplement . Test the following pumps every two months instead of the Code required one month frequency.

- o Safety Injection Pumps
- o Residual Heat Removal Pumps
- o Containment Spray Pumps
- o Auxiliary Component Cooling Pumps
- o Auxiliary Boiler Feedwater Pumps

Code Requirement: (IWP-3400). (a) An inservice test shall be run on each pump, nominally each month during normal plant operation. It is recommended that this test frequency be maintained during shutdown periods where this can reasonably be accomplished, although this is not mandatory. If it is not tested during plant shutdown, the pump shall be tested within one week after plant is returned to normal operation. (b) Pumps that are operated more frequently than every month need not be run or stopped for a special test, provided the plant log shows each such pump was operated at least once every month at the reference conditions and the quantities specified were measured, observed, recorded, and analyzed.

Licensee Basis for Relief Request: (All pumps except Component Cooling, Service Water, and Recirculation Pumps). The nominal pump test frequency as specified in Subsection IWP requires pump testing once each month during normal plant operation. In a total of over 300 monthly tests completed during the last 5-1/2 years to satisfy Technical Specification requirements - approximately 25 tests per pump - the safety injection, residual heat removal, containment spray, auxiliary component cooling and motor driven auxiliary boiler feedwater pumps have demonstrated no significant change in operating characteristics. In light of this experience, exception is taken to peforming monthly tests on these pumps with an alternate proposed two month test interval scheduled. Based on the preceding test results, the two month test interval will not significantly alter the operational readiness of these components and will decrease pump wear-out over the plant life time. The interval between successive tests shall not exceed two months ($\pm$ 25%). Accordingly, during normal plant operation, each pump shall be tested at least six times per year at approximately equal intervals.

Evaluation: The determination of pump operating characteristic changes is considered to be just one of the objectives of the Code. Other prime objectives are: Rotating the pumps periodically for bearing brinelling and lubrication reasons, and verifying periodically that the pumps will respond correctly to electrical initiating signals. Rotation of the pumps on a periodic basis is

believed to stem from Code committee members' investigations and/or experience that showed that bearing brinelling and/or lubrication loss can result when pumps of these types are inactive over long periods. The Code committee's establishment of the one month rotation frequency, is believed to be the result of a consensus of a body of experts at the time. A vast majority of the Licensees seem to support this conclusion by the fact that the one month test frequency is widely practiced.

Periodic testing also provides a degree of assurance that the electrical circuitry has not been opened or reversed as a result of human errors made during performance of maintenance or other checkout procedures. The one month Code frequency is believed to be more conservative than the Licensee's proposed two month frequency with respect to these type problems, in that a problem can be discovered over a shorter period of plant operation. Therefore, it is recommended that this relief request be denied.

1.1.2 Relief Request: (Reference, paragraphs 2.3 and 3.3, supplement 3). Testing of the Recirculation Pumps will be performed during refueling shutdowns.

Code Requirement: See Code Requirement Item 1.1.1.

Licensee Basis for Relief Request: The Recirculation Pumps are located inside containment and are not accessible for testing during normal plant operation. Consequently, exception is taken to testing these pumps at the frequency specified by Subsection IWP. Testing of these pumps will be performed during reactor shutdowns for refueling. This is consistent with present technical specification requirements for recirculation pump surveillance testing.

Evaluation: The Licensee has described the subject pumps as being located in a separate sump inside containment with no provisions for remote readout of pump parameters. The sump does not normally contain enough water to effect safe pump operation, in that the bearings use the pumped fluid for lubrication/cooling. Also, the pump hydraulic circuit is designed only for miniflow testing.

Testing the pumps monthly would require filling the pumps' sump each time with approximately 6000 gallons of water, and requiring that personnel enter containment to conduct the Code required pump tests. This relief request from testing at the Code frequency is based on radiation exposure, and large inventory rad-waste processing requirements.

The significance of at least spin testing the pumps at the Code frequency has been discussed in the evaluation written against the Licensee's relief request to go to a two month test frequency (other pumps). Brinelling and proper pump response to the initiating electrical signal are points that are felt to apply in this case.

In light of this, it is recommended that the Licensee be requested to review the pump configuration and ascertain if it is possible to incorporate modifications such as pump bearing water lube lines and remote readouts that would allow spin testing the pump's Code frequency with the sump water inventory that is normally available, and monitoring the fact that pump rotation is in the proper direction. The pump test circuit configuration was shown only to be a miniflow recirculation path. As such, no design flow type tests can be accomplished during the pumps' inservice life. Based on this, the subject of sump cleanliness should be considered. Foreign objects if present in the sump can affect the ability of the pumps to perform its safety function at design flows. Mini-flow spin tests would not necessarily reveal the existence of foreign objects that are capable of affecting the pumps' ability to perform its designed function. Therefore, it is also recommended that the Licensee be requested to consider this and show what provisions are used, such as periodic sump inspection, to preclude this possibility. Monthly pump spin tests, periodic verification of pump inlet clearance, and full Code parameter tests at refueling outages should be the minimum test plan for these pumps. It is felt that such a plan would adequately satisfy the intent of the Code relative to the recirculation pumps.

Until such time that the Licensee re-reviews these pumps and responds to the issues raised in the preceding paragraphs, it is recommended that this remain an open item.

1.1.3 Relief Request: (Reference, paragraph 3.2, supplement 3). Refrain from continuing the miniflow recirculation testing of the Safety Injection Pumps and Motor Driven Auxiliary Boiler Feedwater Pumps prior to startup during refueling outages and substituting full flow pump tests (present technical specification requirement).

Code Requirement: An inservice test shall be run on each pump, nominally each month during normal plant operation. Each inservice test shall include measurement and observation of all quantities in Table IWP-3100-1 except bearing temperatures which shall be measured during at least one inservice test each year.

Licensee Basis for Relief Request: (Safety Injection and Motor Driven Auxiliary Boiler Feedwater Pumps). Present plant technical specifications and related committments require full flow testing of the safety injection and motor driven auxiliary boiler feedwater pumps prior to startup following each reactor refueling. These full flow tests differ from the Section XI required tests of these pumps which are performed under minimum flow conditions using recirculation loops. Full flow tests are maximum capability tests and serve to verify pump operability at conditions closely approximating those for which the pumps are designed. It is intended that these full flow tests serve in lieu of the Section XI required recirculation flow tests during refueling shutdowns. Subsequent recirculation flow tests will commence two months (± 25%) from the

corresponding full flow test. Although flow rate, suction, discharge and differential pressures will be obtained during full flow testing, test results will not be comparable to those obtained from recirculation tests. Exception is therefore taken to obtaining Section XI specified test data during full flow tests for purposes of comparison with those obtained during recirculation flow tests.

Evaluation: The full flow tests as described are considered to be more conservative from a hydraulic performance evaluation standpoint than the miniflow recirculation listing, in that they serve to verify pump operability at conditions closely approximating design conditions. Therefore, it is recommended that the Licensee be allowed to conduct these full flow tests in lieu of the recirculation miniflow tests during refueling shutdowns as requested.

It should be noted that the reference in this paragraph to recirculation testing two months after full flow testing should be unacceptable and has been covered by the evaluation of paragraph 2.1. See Item 1.1.1.

1.2 Safety Injection Pumps (21, 22, 23)

1.2.1 Relief Request: Exempt Safety Injection Pumps 21, 22, and 23 from having to meet the allowable ranges of test quantities as defined in Table IWP-3100-2 for the Safety Injection Pump hydraulic performance parameters.

Code Requirement: (IWP-3210, Allowable ranges of inservice test quantities). The allowable ranges of inservice test quantities in relation to the reference values, are tabulated in Table IWP-3100-2. In the event these ranges cannot be met, the Owner shall specify in the pump record the reduced range limits to allow the pump to fulfill its function, and those limits shall be used in lieu of the ranges given in Table IWP-3100-2.

Licensee Basis for Relief Request:

1. Criteria A (Miniflow conditions of 25 to 35 gpm).

a. The Safety Injection Pumps shall be considered operable if the pump heads are greater than 3,292 feet, or

b. If one pump head is below 3,292 feet, the Safety Injection Pumps shall be considered operable if the heads for the two higher head pumps are in the acceptance region of Figure E5-1 in Supplement 3.

2. Criteria B (Miniflow conditions of less that 25 gpm for one or more pumps).

a. The Safety Injection Pumps shall be considered operable if the pump heads are greater than 3,311 feet, or,

b. If one pump head is below 3,311 feet, the Safety Injection Pumps shall be considered operable if the heads for the two higher head pumps are in the acceptance region of Figure E5-2 in Supplement 3.

These pumps should be exempt from meeting the allowable ranges of test quantities as defined in Table IWP-3100-2 for the Safety Injection Pump hydraulic performance parameters. Instead, the currently defined parameters as permitted under IWP-3210 should be substituted in its place.

Evaluation: (Reference note 1, supplement 3). The Licensee's relief request is interpreted as asking relief from using the Code rules and procedures designed to detect changes in pump operating performance, and to substitute instead a set of go/no-go limits for a system of pumps. As limits, the Licensee's proposal is taken heed of when a pump becomes a problem. The Code procedure is expected to provide trend data that can detect changes in pump performance before the pump no-go limits are reached. One is not a substitute for the other. Reference values should be established (IWP-3210) for the individual pumps and test data analyzed relative to these reference values for trend purposes so that corrective action can be initiated per IWP-3230.

Based on the above evaluation, therefore, it is recommended that this relief request be denied.

1.2.2 Relief Request: A bearing temperature of the Safety Injection Pumps shall be considered stabilized after 15 minutes of pump operation.

Code Requirement: When measurement of bearing temperature is required, each pump shall be run until the bearing temperatures (IWP-4310) stabilize, and then the quantities specified shall be measured or observed and recorded. A bearing temperature shall be considered stable when three successive readings taken at ten minute intervals do not vary by more than 3 percent.

Licensee Basis for Relief Request: Exception is taken to the time interval requirements between successive measurements of bearing temperature as specified by paragraph IWP-3500(b). Pump operating time for purposes of testing is severely limited by potential pump overheating under the minimum flow conditions dictated by the test circuit. Accordingly, bearing temperature will be measured once, after fifteen minutes of pump operation.

Evaluation: (Reference note 5, supplement 3). Operating experience is used to justify the Licensee's contention that bearing temperature is sufficiently stabilized after 15 minutes of pump operation to permit measurement, and that pump overheating can result from running the pumps longer at miniflow conditions. It is recommended, therefore, that relief be granted as requested.

1.3 Residual Heat Removal Pumps (21, 22)

1.3.1 Relief Request: A bearing temperature of the RHR Pumps shall be considered stabilized after 15 minutes of pump operation.

Code Requirement: See Code Requirement Item 1.2.2.

Licensee Basis for Relief Request: See Licensee Basis for Relief Request Item 1.2.2.

Evaluation: (Reference note 5, supplement 3). Operating experience is used to justify the Licensee's contention that bearing temperature is sufficiently stabilized after 15 minutes of pump operation to permit measurement, and that pump overheating can result from running the pumps longer at miniflow conditions. It is recommended, therefore, that relief be granted as requested.

1.3.2 Relief Request: These RHR Pumps are to be lubricated by either sealed grease type bearings or pumped fluid.

Code Requirement: Table IWP-3100-1 requires that proper lubricant level or pressure be observed.

Licensee Basis for Relief Request: The design of these pumps does not incorporate independent lubrication systems having measurable or observable characteristics.

Evaluation: (Reference note 8, supplement 3). These pumps are lubricated by the pumped fluid, therefore, checking the lubricant level does not apply. It is recommended that relief be granted as requested.

1.4 Containment Spray Pumps (21, 22)

1.4.1 Relief Request: A bearing temperature of the Containment Spray Pumps shall be considered stabilized after 15 minuties of pump operation.

Code Requirement: See Code Requirement Item 1.2.2.

Licensee Basis for Relief Request: See Licensee Basis for Relief Request Item 1.2.2.

Evaluation: (Reference note 5, supplement 3). Operating experience is used to justify the Licensee's contention that bearing temperature is sufficiently stabilized after 15 minutes of pump operation to permit measurement, and that pump overheating can result from running the pumps longer at miniflow conditions. It is recommended, therefore, that relief be granted as requested.

1840 253

1.5 Component Cooling Pumps (21, 22, 23)

1.5.1 Relief Request: Withhold implementing the required tests on Component Cooling Pumps 21, 22, and 23 until the proper modifications are completed.

Code Requirement: See Code Requirement Item 1.1.3.

Licensee Basis for Relief Request: Due to the demands of dependent systems, the individual testing of Component Cooling Pumps as required by IWP-3400(a) could jeopardize plant operation. Although instrumentation is installed which will permit the recording of inlet pressure of each pump, pressure measurement on the pump discharge can only be monitored at the common discharge header. The plant design does not incorporate independent flow measurement instrumentation. Currently, correct performance of these pumps can only be assessed on their continued ability to perform their intended function. An engineering review is underway to provide for independent measurement of the hydraulic parameters for each pump as required by IWP-3400(a) and exception is taken to implementing the required tests on these pumps until modifications have been completed.

Evaluation: (Reference note 2, supplement 3). The Licensee has indicated that present plans call for the modifications to be completed during the fourth refueling period towards the end of 1980.

It is recommended that this relief request be granted for the test period covered by this submittal. The subject should be reviewed upon receipt of future submittals until the modifications are completed, and it is shown that the Licensee intends to satisfy Code requirements.

1.6 Auxiliary Component Cooling Pumps (21, 22)

1.6.1 Relief Request: Auxiliary Component Cooling Pumps 21 and 22 are to be lubricated by either sealed grease type bearings or pump fluid.

Code Requirement: See Code Requirement Item 1.3.2.

Licensee Basis for Relief Request: The design of these pumps do not incorporate independent lubrication systems having measurable or observable characteristics.

Evaluation: (Reference note 8, supplement 3). The pumps are equipped with bearings that are grease lubricated, therefore, checking the lubricant level does not apply. It is recommended that relief be granted as requested.

1.7 Service Water Pumps (21, 22, 23, 24, 25, 26)

1.7.1 Relief Request: Withhold implementing the required tests on Service Water Pumps 21, 22, 23, 24, 25, and 26 until the proper modifications are completed.

Code Requirement: See Code Requirement Item 1.1.3

Licensee Basis for Relief Request: The service water pumps are vertical design with no means of direct inlet pressure measurement

as required by IWP-4200 at this time. Due to demands of dependent systems, the individual testing of Service Water Pumps, as required by IWP-3400(a), could jeopardize plant operation. Although individual pump discharge pressures can be measured, the plant design does not incorporate any flow measurement instrumentation. Currently, correct performance of these pumps can only be assessed on their continued ability to perform their intended function. An engineering review is underway to provide for independent measurement of the hydraulic parameters of each pump and exception is taken to implementing the required tests on the Service Water Pumps until appropriate modifications have been completed.

Evaluation: (Reference note 3, supplement 3). The Licensee has indicated that present plans call for the modifications to be completed during the fourth refueling period towards the end of 1980.

It is recommended that this relief request be granted for the test period covered by this submittal. The subject should be reviewed upon receipt of future submittals until the modifications are completed, and it is shown that the Licensee intends to satisfy Code requirements.

1.7.2 Relief Request: The Service Water Pumps are to be lubricated by either sealed grease type bearings or pumped fluid.

Code Requirement: See Code Requirement Item 1.3.2.

Licensee Basis for Relief Request: The design of these pumps do not incorporate independent lubrication systems having measurable or observable characteristics.

Evaluation: (Reference note 8, supplement 3). These pumps' bearings are lubricated by the pumped fluid, therefore, checking the lubricant level does not apply. It is recommended that relief be granted as requested.

1.8 Auxiliary Feedwater Pumps (21, 23) - Motor Driven

1.8.1 Relief Request: A bearing temperature of the Auxiliary Feedwater Pumps shall be considered stabilized after 15 minutes of pump operation.

Code Requirement: See Code Requirement Item 1.2.2.

Licensee Basis for Relief Request: See Licensee Basis for Relief Request Item 1.2.2.

Evaluation: (Reference note 5, supplement 3). Operating experience is used to justify the Licensee's contention that bearing temperature is sufficiently stabilized after 15 minutes of pump operation to permit measurement, and that pump overheating can result from running the pumps longer at miniflow conditions. It is recommended, therefore, that relief be granted as requested.

1840 255

1.9 Recirculation Pumps (21, 22)

1.9.1 Relief Request: A bearing temperature of the Recirculation Pumps shall be considered stabilized after 15 minutes of pump operation.

Code Requirement: See Code Requirement Item 1.2.2.

Licensee Basis for Relief Request: See Licensee Basis for Relief Request Item 1.2.2.

Evaluation: (Reference note 5, supplement 3). Operating experience is used to justify the Licensee's contention that bearing temperature is sufficiently stabilized after 15 minutes of pump operation to permit measurement, and that pump overheating can result from running the pumps longer at miniflow conditions. It is recommended, therefore, that relief be granted as requested.

1.9.2 Relief Request: Recirculation Pumps 21 and 22 are to be lubricated by either sealed grease type bearings or pumped fluid.

Code Requirement: See Code Requirement Item 1.3.2.

Licensee Basis for Relief Request: The design of these pumps do not incorporate independent lubrication systems having measurable or observable characteristics.

Evaluation: (Reference note 8, supplement 3). These pumps' bearing are lubricated by the pumped fluid, therefore checking the lubricant level does not apply. It is recommended that relief be granted as requested.

2.0 VALVES, INSERVICE TESTING PROGRAM

2.1 General

2.1.1 The scope of this review is limited to those valves which perform a safety related function. Safety related valves, for the purpose of IST, have been defined as those valves that are necessary to function to safely shutdown the plant and/or mitigate the consequences of an accident. As a minimum, all valves that receive a containment isolation signal or a safety injection signal shall be included in the IST program.

The following guidelines were developed after review of some initial IST programs.

2.1.2 Leak Testing of Valves which Perform a Pressure Isolation Function

There are several safety systems connected to the reactor coolant pressure boundary that have design pressures that are below the reactor coolant system operating pressure. It is required that there be redundant isolation valves forming the interface between these high and low pressure systems to prevent the low pressure systems from being subjected to pressures which exceeds their design limits. In this role the valves are performing a pressure isolation function.

The redundant isolation provided by these valves regarding their pressure isolation function is important. It is considered necessary to provide assurance that the condition of each of these valves is adequate to maintain this redundant isolation and system integrity. For this reason it is believed that some method, such as a leak testing, should be used to assure their condition is sufficient to maintain this pressure isolation function.

In the event that leak testing is selected as the appropriate procedure for reaching this objective, the staff believes that the following valves should be categorized as A or AC and leak tested in accordance with IWV-3420 of Section XI of the applicable edition of the ASME Code. These valves are:

o Safety Injection System (A206744)

857A	857J	897A
857B	857K	897B
857C	857L	897C
857D	857M	897D
857E	895A	838A
857F	895B	838B
857G	895C	838C
857H	895D	838D

We have discussed this matter and identified the valves listed above to the Licensee. The Licensee has agreed to consider leak

testing these valves in accordance with IWV-3420 of the applicable edition of the ASME Code and to categorize these valves with the appropriate designation. If the Licensee determines that leak testing is not necessay because there are other methods that the Licensee has and will use to determine each valve's condition, the Licensee will provide to the NRC for evaluation on a valve-by-valve basis the details of the method used that clearly demonstrates the condition of each valve.

2.1.3 Containment Isolation Valves

The Appendix J review for this plant is a completely separate review from this IST program review. However, the determinations made by that review are directly applicable to the IST program. The present IST submittal should be acceptable until the Appendix J review is completed. At that time, the licensee will be required to amend his IST program to reflect the conclusions of the Appendix J review.

2.1.4 Category A Valve Leak Check Requirements for Containment Isolation Valves (CIV)

All CIVs shall be classified as Category A valves. The Category A valve leak rate test requirements of IWV-3420 (a-e) have been superceded by Appendix J requirements for CIVs. The staff has concluded that the applicable leak test procedures and requirements for CIVs are determined by 10 CFR 50 Appendix J. Relief from paragraph IWV-3420 (a-e) for CIVs presents no safety problem since the intent of IWV-3420 (a-e) is met by the Appendix J requirements.

Sections f and g of IWV-3420 must be met by the licensee otherwise relief must be requested from these paragraphs. It should be noted that these paragraphs are only applicable where a type C Appendix J leak test is performed.

The safety function of CIVs and thus passive CIVs is to perform leak limiting barriers. These are valves, which are normally closed, thus in their safety position, and are not required to open to mitigate the consequences of an accident or to safely shutdown the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function for which they perform. It is thus concluded that the quarterly stroke and stroke time measurement are meaningless for passive CIVs.

2.1.5 Stroke Requirements for Passive Valves

These valves are normally closed and thus in their safety-related position and are not required to change position, that is to open or close to mitigate the consequences of an accident or to safely shutdown the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function for which they perform. It is thus concluded that the quarterly stroke and stroke time measurement are meaningless for passive valves.

2.1.6 Valves to be Tested at Cold Shutdowns

Valve testing should commence not later than 48 hours after shutdown, and continue until complete or plant is ready to return to power. Completion of all valve testing is not a prerequisite to return to power. Any testing not completed at one cold shutdown should be performed during subsequent cold shutdowns to meet the Code specified testing frequency.

In the case of valves exercised less frequently than cold shutdown (i.e., refueling), relief from the Code requirement must be requested. These cases are treated as such in this review.

2.1.7 Valve Exercising Requirements

ASME Code, Section XI, Subsection IWV-3410(a) requires that Code Category A and B valves be exercised once every 3 months, with the exceptions as defined in IWV-3410(b-1), (e), and (f). IWV-3520(a) requires that Code Category C valves be exercised once every 3 months, with the exceptions as defined in IWV-3420(b). IWV-3700 requires no regular testing for Code Category E valves. Operational checks, with appropriate record entries, shall record the position of these valves before operations are performed and after operations are completed and shall verify that each valve is locked, or sealed. The limiting value of full stroke time for each power operated valve shall be identified by the owner and tested in accordance with IWV-3410(c). In the above exceptions, the code permits the valves to be tested at cold shutdown where:

a. It is not practical to exercise the valves to the position required to fulfill their function or to the partial position during plant operation.

b. It is not practical to observe the operation of the valves (with fail-safe actuators) upon loss of actuator power.

2.1.8 Changes to the Technical Specifications

In a November 1976 letter to the Consolidated Edison Company of New York, the NRC provided an attachment entitled "NRC Staff Guidelines for Excluding Exercising (Cycling) Tests of Certain Valves During Plant Operation." The attachment stated that when one train of a redundant system such as in the ECCS in inoperable, nonredundant valves in the remaining train should not be cycled since their failure would cause a loss of total system function. For example, during power operation in some plants, there are stated minimum requirements for systems which make up the ECCS which allow certian limiting conditions for operation to exist at any one time and if the system is not restored to meet the requirements within the time period specified in a plant's Technical Specification the reactor is required to be put in some other mode. Furthermore, prior to initiating repairs all valves and interlocks in the system that

provide a duplicate function are required to be tested to demonstrate operability immediately and periodically thereafter during power operation. For such plants this situation would be contrary to the NRC guidelines as stated in the document mentioned above.

The Indian Point, Unit 2, Technical Specifications may have requirements that are contrary to the above mentioned guidelines. We have discussed this situation with the Licensee and the Licensee has agreed to review the Technical Specification and to consider the need to propose Technical Specification changes which would have the effect of precluding such testing.

If, after making this consideration, the licensee determines that the TS should not be changed because the guidelines are not applicable or if that the guidelines cannot be followed, the Licensee shall submit to the NRC the reasons that led to their determination for each potentially affected valve. In the Licensee submittal, the potentially affected sections of the TS, in addition to the valves, should be identified.

2.2 General Relief Requests

2.2.1 Relief Request: All Category A valves will meet Appendix J leak testing requirements in lieu of Section XI requirements.

Code Requirement: IWV-3420 Valve Leak Rate Test. Category A valves shall be leak-tested. Tests shall be conducted at the same (or greater) frequency as scheduled refueling outages, but not less than once every two years. Valve seat leakage tests shall be made with the pressure differential in the same direction as will be applied when the valve is performing its function with the following exceptions:

1. Any globe type valve may be tested with pressure under seat.

2. Butterfly valves may be tested in either direction, provided their seat construction is designed for sealing against pressure on either side.

3. Gate valves with two-piece disks may be tested by pressurizing them between the seats.

4. All valves (except check valves) may be tested in either direction if the function differential pressure is 15 psi or less.

5. The use of leakage tests involving pressure differentials lower than function pressure differentials are permitted in those types of valves in which service pressure will tend to diminish the overall leakage channel opening, as by pressing the disk into or onto the seat with greater force. Gate valves, check valves, and globe type valves having function pressure differential applied over the seat, are examples of valve applications satisfying this requirement. When leakage tests are

made in such cases using pressures lower than function maximum pressure differential, the observed leakage shall be adjusted to function maximum pressure differential value by calculation appropriate to the test media and the ratio between test and function pressure differential assuming leakage to be directly proportional to the pressure differential to the one-half power.

6. Any valves not qualifying for reduced pressure testing as defined in 3420(c)(5) shall be leak-tested at full maximum function pressure differential, with adjustment by calculation if needed to compensate for a difference between service and test media.

Valve seat leakage may be determined by:

1. Draining the line, closing the valve, bringing one side to test pressure, and measuring leakage through a downstream telltale connection, or,

2. By measuring feed rate required to maintain pressure between two valves, or between two seats of a gate valve, provided the total apparent leak rate is charged to the valve or gate valve seat being tested, and that the conditions required by IWV-3420(c) are satisfied.

The test medium shall be specified by the Owner.

Licensee Basis for Relief Request: Appendix J leak testing meets the intent of Section XI Requirements.

Evaluation: The Category A valve leak rate test requirements of IWV-3420 (a-e) have been superceded by Appendix J requirements for CIVs. The NRC staff has concluded that the applicable leak test procedures and requirements for CIVs are determined by 10 CFR 50 Appendix J. Relief from paragraph IWV-3420 (a-e) for CIVs presents no safety problem since the intent of IWV-3420 (a-e) is met by the Appendix J requirements.

Section f and g of IWV-3420 must be met by the licensee otherwise relief must be requested from these paragraphs. It should be noted that this relief request applies only where a type C Appendix J leak test is performed. Therefore, it is recommended that relief by granted from the leak test requirements of Section XI for the following listed CIVs.

o Safety Injection System

867A	851A	888A
867B	851B	888B
869A	859A	863
869B	859C	4312
850A	885A	743
850B	885B	1870
878A	878B	

1840 261

- Auxiliary Coolant System

744	784	798
741	FCV-625	791
732	796	797
793		

- Chemical and Volume Control System

222	241A	250A
226	241B	250B
205	241C	250C
201	241D	250D
202	227	

- Reactor Coolant System

548	518	580A
549	519	580B
550	552	

- Service Water System

SWN-41 (5 valves)
SWN-42 (5 valves)
SWN-43 (5 valves)
SWN-44 (5 valves)
SWN-51
SWN-71 (5 valves)

- Sampling System

956A	956H
956B	958
956C	959
956D	990A
956E	990B
956F	990C
956G	

- Post Accident Containment Air Sampling System

1875A	1875D	1875G
1875B	1875E	1875H
1875C	1875F	1875J

- Hydrogen Recombiner System

1882A	1876-9	4430
1882-9	4431	IV-5A
4432	IV-3B	4429
IV-5B	1875-9	IV-3A
1875-8	IV-2A	IV-2B
1876-8		

o Steam Generator Blowdown and Sampling System

PCV-1223	PCV-1226	PCV-1215A
PCV-1223A	PCV-1226A	PCV-1216
PCV-1224	PCV-1214	PCV-1216A
PCV-1224A	PCV-1214A	PCV-1217
PCV-1225	PCV-1215	PCV-1217A
PCV-1225A		

o Waste Disposal System

1786	1789
1787	1702
1610	1705
1616	1728
1788	1723

o Miscellaneous CIV's

1190	UH-43	85D
1191	UH-44	95A
1192	1234	95B
1170	1235	95C
1171	1236	95D
1172	1237	1814A
1173	SA-24 (2 valves)	1814B
PCV-1228	MV-17 (2 valves)	1814C
PCV-1229	85A	IA-39
PCV-1230	85B	E-1
E-2	E-3	E-5

2.3 Safety Injection System (A206744)

2.3.1 Code Relief - Category A Valves

2.3.1.1 Relief Request: Valves 867A and 867B will not be full stroke exercised every 3 months to the requirements of Section XI.

Code Requirement: Category A valves shall be exercised at least once every 3 months with the exceptions as shown in the following paragraph. They shall be leak tested at the same (or greater) frequency as scheduled refueling outages but not less than once every two years.

Valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation the valve shall be part stroke exercised during plant operation and full stroked during each cold shutdown; in case of frequent cold shutdowns these valves need not be exercised more often than once every 3 months. Valves that cannot be operated during normal plant operation shall be specifically identified by the

Owner and shall be full stroke exercised during each cold shutdown; in case of frequent cold shutdowns these valves need not be exercised more often than once every 3 months.

For Category C Code requirements, see Item 2.3.3.1. A combination of categories, such as categories AC are to be used when more than one distinguishing category characteristic is applicable. In such cases, all requirements of each of the individual categories are applicable, although duplication or repetition of common testing requirements is not necessary

Licensee Basis for Relief Request: Full stroking these valves every 3 months is impractical during normal plant operations. Part stroke exercising during monthly containment spray pump tests is practical.

Evaluation: This evaluation need only address the category C exercising requirements of the subject check valves. It is recommended that relief be granted from the IWV-3410 requirement for category A valves as this paragraph does not apply to check valves.

The containment Ssray discharge check valves, 867A and 867B are closed during plant operation and are required to open when the containment spray pumps are activated to supply reactor water storage tank (RWST) water/spray additive to the containment spray headers.

The check valves will be part stroke exercised at least every 2 months during the proposed containment spray pump tests (recirculation/miniflow). Flow through the valves during these pump tests is expected to be 25-35 gpm as compared to the design flow of approximately 2600 gpm.

The Licensee has indicated that full-stroke exercising these valves is not practical at anytime. The valves are not designed with mechanical external actuators, and are also a welded design with no provisions for disassembling and stroking in the installed condition. The only way to full stroke exercise would be to activate the containment spray pumps and spray down containment, in that the valves cannot be externally stroked (mechanically) or internally stroked (disassembling) in place and that spraying down containment is highly impractical. It is believed that the Licensee has demonstrated that part stroke exercising is the practical alternative.

The NRC has agreed to review the testing proposed for these valves and determine if the degree of testing (part stroke at frequency proposed) is adequate to justify granting relief from full stroke exercising. Until this is accomplished, it is recommended that the relief request for not full stroke exercising at any time during their inservice life be denied.

2.3.1.2 Relief Request: Valves 850A and 850B will be exempt from the exercising requirements of IWV-3410 for Category A valves.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are either locked open or locked closed manual Containment Isolation Valves and as such are categorized as category AE valves. As a result of their locked status, these valves will satisfy the cateogyr E requirements set forth in IWV-3700. However, since they are Containment Isolation Valves, these valves will also satisfy the category A leak testing requirements of IWV-3420 but will be exempt from the exercising requirements of IWV-3410.

Evaluation: 850A and 850B are manual Containment Isolation Valves on the discharges of the safety-injection pumps. The valves are locked open during normal plant operation, and are required to be closed following shutdown of the SI pumps at some time after the design basis accident condition, in that the valves are CIV's. The Licensee was requested to and has agreed to review these valves and determine if the Code required (full/stroke/3 month) exercise test could be accomplished, or if any stroke and/or test frequency other than the Code requirement could be proposed. The Licensee has also agreed to provide a basis to justify this proposal.

Until this information is received and reviewed, it is recommended that any request for relief from the Code exercising requirement be denied.

2.3.1.3 Relief Request: Valves 859A and 859C will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are locked closed, therefore exercising them is not necessary.

Evaluation: Valves 859A and 859C are manual locked closed CIV's in the S.I. pump test circuit. These valves are normally closed during normal plant operation and have a safety function to close. Therefore, they can be considered passive valves. Per Item 2.1.5 for passive valves, it is recommended that relief be granted from Section XI stroking requirements.

2.3.1.4 Relief Request: Valves 863 and 4312 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are normally closed, which are required to be closed during an accident condition.

Evaluation: Valve 4312 is a category AC Check Valve. Both valves (863 and 4312) are Containment Isolation Valves in the GN2 supply line to the accumulators. These valves are normally closed valves, whose safety function is to close, as such, it is considered a passive valve. Therefore, it is recommended, per Item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.3.1.5 Relief Request: Valves 743 and 1870 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are normally open and are required to be open during an accident.

Evaluation: Valves 743 and 1870 are locked open valves in the miniflow test path of the Residual Heat Removal (RHR) Pumps. These valves are also CIV's. Valves 743 and 1870 are normally open and are manually closed at some time after the accident initiation. However, this item must remain open until such time as the Licensee reviews and determines if stroking these valves will be accomplished per Category A requirements. It is recommended that this relief request, therefore, be denied at this time.

2.3.2 Code Relief - Category B Valves

2.3.2.1 Relief Request: Valves 856A, 856C, 856D, and 856E will be full-stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: Category B valves shall be exercised at least once every 3 months with the exceptions as shown in the following paragraph.

Valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation the valve shall be part stroke exercised during plant operation and full stroked during each cold shut; in case of frequent cold shutdowns these valves need not be exercised more often than once every 3 months. Valves that cannot be operated during normal plant operation shall be specifically identified by the Owner and shall be full stroke exercised during each cold shutdown; in case of frequent cold shutdowns these valves need not be exercised more often than once every 3 months.

Licensee Basis for Relief Request: These valves cannot be operated during normal plant operation but will be full-stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations is also impractical.

Evaluation: Valves 856A, 856C, 856D and 856E are shutoff valves in the SI lines which are in the cold legs of the Reactor Coolant System (RCS). These are normally open valves whose function is to close when the hot leg safety injection is required. Presently, the Licensee does not intend to full stroke exercise these valves on a quarterly basis. This item must remain open until such time as the Licensee provides sufficient technical justification for not exercising these valves quarterly. Therefore, until such information is provided, it is recommended that this relief request be denied.

2.3.2.2 Relief Request: Valves 842 and 843 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be part stroke exercised either during normal plant operation or at cold shutdowns but can be full stroke exercised at refueling outages.

Evaluation: Valves 842 and 843 are valves in the S.I. pump test line to the Reactor Water Storage Tank (RWST). These valves are normally open and have a safety function to close when the Safety Injection (SI) flow begins to travel to the RCS. These valves are open or closed only valves, therefore, part stroke exercising them is impractical during normal plant operation.

Exercising the valves quarterly could compromise the SI pump operation if the valves were to fail in a closed position. If the valves were in the closed position and the pumps were started, the result would be a dead head condition which most likely would cause damage to the pumps.

The Licensee presently intends to full stroke exercise these valves at refueling outages. No justification, however, has been given for not full stroke exercising these valves at cold shutdowns. Until sufficient technical documentation is provided to justify not stroking these valves at cold shutdowns, it is recommended that relief be denied.

2.3.2.3. Relief Request: Valves 1831 and 1821 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be part stroke exercised either during normal plant operation or at cold shutdowns but can be full stroke exercised at refueling outages.

Evaluation: Valves 1831 and 1821 are Boron Injection Tank (BIT) outlet shutoff valves. These valves are also open or closed only valves, therefore, part stroke exercising them is impractical

during normal plant operation. The valves are normally open and have a safety function to close upon the initiation of a BIT low level signal.

Exercising the valves quarterly places the BIT system in a non-conservative condition (i.e., the failure of the valves in a closed position nullifies the availability of the BIT system in the event of a concurrent emergency situation). The Licensee presently proposes to full stroke exercise these valves at refueling outages. No justification, however, has been given for not full stroke exercisng these valves at cold shutdowns.

Until sufficient technical documentation is provided to justify not stroking these valves at cold shutdowns, it is recommended that this relief request be denied.

2.3.2.4 Relief Request: Valves 1822A and 1822B will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be part stroke exercised either during normal plant operation or at cold shutdowns but can be full stroke exercised at refueling outages.

Evaluation: Valves 1822A and 1822B are shutoff valves on the Boron Injection Tank (BIT) outlet lines. These valves are also open or closed only valves, therefore, part stroke exercising them is impractical during normal plant operation the valves are normally closed and their safety function is to open.

Cycling these valves quarterly requires that valves 1831 and 1821 be closed in order to prevent concentrated boron solution from getting into the downstream plumbing.

As a result valves 1831 and 1821 cannot be cycled quarterly.

The Licensee presently proposes to full stroke exercise these valves at refueling outages. No detailed technical justification has been given for not full stroke exercising these valves at cold shutdowns. Until sufficient technical documentation is provided to justify not stroking these valves at cold shutdowns, it is recommended that this relief request be denied.

2.3.3 Code Relief - Category C Check Valves

2.3.3.1 Relief Request: Valves 857A, 857B, 857C and 857D will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: Check valves shall be exercised at least once every 3 months, with the exceptions as shown in the following paragraph.

Check valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation the check valve shall be part stroke exercised during plant operation and full stroked during each cold shutdown. In case of frequent cold shutdowns these check valves need not be exercised more often than once every 3 months. Check valves that cannot be operated during normal plant operation shall be specifically identified by the Owner and shall be full stroke exercised during each cold shutdown. In case of frequent cold shutdowns these check valves need not be exercised more often than once every 3 months.

Licensee Basis for Relief Request: Full stroke or part stroke exercising these valves during normal plant operations is impractical because the reactor coolant pressure cannot be overcome.

Evaluation: Valves 857A, 857B, 857C, and 857D are Pressure Isolation Check Valves in the hot leg injection lines to the RCS and are at the interface of the RCS and Safety Injection System (SIS). The valves are held closed by the RCS pressure during normal plant operation, and their emergency function is to open in order to permit flow from the High Pressure Safety Injection (HPSI) pumps into the RCS following a loss of coolant accident (LOCA).

The SIS configuration is such that, the only practical way the valves can be exercised is by activating the HPSI pumps and establishing flow through the valves.

During normal plant operation, the RCS pressure is approximately 2200 psig. The HPSI pumps do not have the pressure capability (design discharge pressure approximately 1700 psig) to overcome the RCS pressure and establish flow through the Check Valves. Part of the temperature over pressure protection requirements at cold shutdowns is such that the HPSI pumps be deactivated when the RCS is pressurized and below 1900 psig. This is to prevent an inadvertant pressurization of the RCS by the HPSI pumps at this time. Therefore, flow cannot be established through the Check Valves by the HPSI pumps during these cold shutdowns.

Therefore, it is concluded that the Licensee has demonstrated the impracticality of part or full stroke exercising every 3 months and at cold shutdowns. Full stroke exercising these valves at refueling outages is the practical alternative.

It is recommended that relief be granted as requested.

2.3.3.2 Relief Request: Valves 857G, 857H, 857M, and 857F will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: Full stroke or part stroke exercising these valves during normal plant operations is impractical because the reactor coolant pressure cannot be overcome.

Evaluation: These pressure isolation check valves are in the hot leg injection lines from the HPSI pumps. They are closed during normal plant operation, and their emergency function is to open to permit flow from the HPSI pumps to the RCS following a LOCA. 857M, F, G, and H are upstream and in series with 857A, B, C, and D respectively. Since 857A thru D cannot be exercised quarterly or at cold shutdowns, the evaluation written for 857A, B, C, and D also applies to the subject check valves.

Therefore, it is concluded that the Licensee has demonstrated the impracticality of part or full stroke exercising every 3 months and at cold shutdowns. Full stroke exercising these valves at refueling outages is the practical alternative. It is recommended that relief be granted as requested.

2.3.3.3 Relief Request: Valves 857E, 857J, 857K and 857L will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: Full stroke or part stroke exercising these valves during normal plant operations is impractical because the reactor coolant pressure cannot be overcome.

Evaluation: These pressure isolation check valves are in the cold leg injection lines from the HPSI pumps. 857E/J and 857K/L are upstream and in series with 897A and 897C respectivey. They are closed during normal plant operation, and their emergency function is to open to permit flow from the HPSI pumps to the RCS following a LOCA. Since 897A and 897C cannot be exercised quarterly or at cold shutdowns, the evaluation written for these valves also applies to the subject check valves.

Therefore, it is concluded that the Licensee has demonstrated the impracticality of part or full stroke exercising every 3 months and at cold shutdowns. Full stroke exercising at refueling outages is the practical alternative. It is recommended that relief be granted as requested.

2.3.3.4 Relief Request: Valves 895A, 895B, 895C, and 895D will not be full or part stroke exercised during normal plant operations but will be part stroke exercised at refueling outages.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: Full or part stroke exercising these valves during normal plant operation is impractical.

Evaluation: Valves 895A, 895B, 895C, and 895D are Pressure Isolation Check Valves in the outlet lines from the accumulators (one per accumulator). They are closed during normal plant operation, and their emergency function is to open following a LOCA, (RCS pressure drops below approximately 650 psig) to allow water from the accumulators to transfer to the RCS.

The SIS configuration is such that the only practical way the valves can be exercised is by blowing down water from the accumulators to the RCS. 895A thru 895D are upstream and in series with 897A thru 897D which are held closed at this condition by a differential pressure of about 1550 psig (res. at 2200 psig vs. accumulators at 650 psig). Therefore, flow cannot be established from the accumulators during normal power conditions.

Part of the low temperature over-pressurization protection requirements at cold shutdowns, is that the MOVs 895A thru 895D are closed when the RCS pressure is reduced below 1000 psig. These MOV's are in the accumulator outlet lines, and are upstream and in series with the subject check valves. Therefore, flow cannot be established from the accumulators during these cold shutdown conditions.

The Licensee has agreed (SER meeting) to part stroke exercise these check valves at refueling outages, but has not presented specific reasons when the valves cannot be full stroke exercised at some time during their inservice life.

In order to complete the evaluation, the Licensee should provide information concerning the degree of part stroke exercising expected during tests such as percentage of design flowrates obtained, or some other measure. The Licensee should also give specific reasons why full stroking these valves cannot be accomplished at refueling outages or at some time during inservice life.

Until this information is received and reviewed, it is recommended this relief request be denied.

2.3.3.5 Relief Request: Valves 886A and 886B will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full or part stroke exercised quarterly during normal plant operations but can be full stroke exercised at refueling outages.

Evaluation: Valves 886A and 886B are recirculation outlet valves from the recirculation pumps of the Safety Injection System (SIS). These valves are normally closed and have an emergency function to open. When the recirculation pumps are activated, the recirculation mode from the recirculation sump to the RCS, is initiated.

These valves are located inside containment, therefore, the only means of opening them is by activating the recirculation pumps. Full stroke exercising these valves quarterly during normal plant operations is impractical because the pumps which feed water to the valves are located in the sump. If operated during normal plant operations, the sump will not have enough water to operate the pumps. The pumps cannot be operated dry because this can lead to damage. These valves cannot be full stroke exercised at cold shutdowns because the sump is dry at that time. Filling the sump for the pump tests requires approximately 6000 gallons which creates a radioactive waste problem.

This item must remain open until such time as the Licensee confirms that full stroke exercising of these valves will be at refueling outages.

2.3.3.6 Relief Request: Valve 881 will be part stroke exercised during the monthly RHR pump tests.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: Valve 881 cannot be full stroke exercised during cold shutdowns but can be part stroke exercised quarterly during the RHR pump tests.

Evaluation: Valve 881 is a recirculation inlet check valve to the RHR pumps from the Reactor Water Storage Tank. The valve is normally closed and has an emergency function to open when the RHR pumps are used in the LPSI mode. This item must remain open until such time as the Licensee provides whether the flow at recirculation during cold shutdown and/or refueling is a full stroke exercise. Until such technical information is provided, it is recommended that this relief request be denied.

2.3.3.7 Relief Request: Valve 879A and 879B will not meet the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: None provided.

Evaluation: Valves 879A and 879B are Check Valves of the Safety Injection System. The Licensee is presently reviewing the possibility of adding these valves to the IST program as category C type valves. This item must remain open until such time as the Licensee addresses all exercises, (full stroke/part stroke at frequencies of quarterly, cold shutdown, or refueling) and decides which is the most applicable to the situation.

2.3.3.8 Relief Request: Valve 847 will be part stroke exercised monthly during SI pump tests and will be full stroke exercised at refueling outages during the SI pump tests.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full stroke exercised at cold shutdowns but can be part stroke exercised monthly during the SI pump tests on recirculation and full stroke exercised at refueling outages during the SI pump tests.

Evaluation: Valve 847 is a check valve located at the inlet to the Safety Injection (SI) pumps from the Refueling Water Storage Tank (RWST). This valve is normally closed and has an emergency function to open. The only practical means to exercise this check valve is to activate the SI pumps and flow water from the RWST to the Reactor Coolant System (RCS). Full stroke exercising the valve quarterly while the plant is at normal operating power is impractical in that the RCS pressure is at approximately 2250 psig. This pressure locks out the check valve at the RCS/SIS interface that are downstream and in series with the subject check valve. The head available from the SI pumps is not enough to overcome the RCS pressure, thereby preventing flow. It is also impractical to exercise the valve at cold shutdowns. The SI pumps are deactivated when the RCS pressure goes below 1900 psig as part of the overpressure protection requirements.

The valve is part stroke exercised monthly during the SI pump tests in the recirculation test mode, and full stroke exercised at refueling outages during the SI pump tests. Therefore, it is recommended, due to the impracticality caused by plant design, that relief be granted to full stroke exercise this valve at refueling outages in lieu of Section XI requirements.

2.3.3.9 Relief Request: Valves 849A, 849B, 852A, and 852B will be part stroke exercised quarterly and will be full stroke exercised at refueling outages during full flow SI pump tests.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full stroke exercised to the requirements of Section XI, but can be part stroke exercised quarterly during accumulator topping and full stroke exercised at refueling outages during full flow SI pump tests.

Evaluation: Valves 849A, 849B, 852A, and 852B are Check Valves located at the outlet of the SI pumps. These valves are normally closed and have an emergency function to open. Full stroke exercising these valves quarterly while the plant is at normal operating power is impractical in that the RCS pressure is at approximately 2250 psig. This pressure locks out these check valves at the RCS/SIS interface that are downstream and in series with the subject check valve. The head available from the SI pumps is not enough to overcome the RCS pressure, thereby preventing flow.

It is also impractical to exercise these valves at cold shutdowns. The SI pumps are deactivated when the RCS pressure goes below 1900 psig as part of the low temperature over-pressurization protection requirements.

These valves are part stroke exercised at least on a quarterly basis during the accumulator top off operations and full stroke exercised at refueling outages during the SI pump tests.

Therefore, it is recommended, due to the impracticality caused by plant design, that relief be granted to full stroke exercise these valves at refueling outages in lieu of Section XI requirements.

2.3.3.10 Relief Request: Valves 1838A and 1838B will not meet the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: none provided.

Evaluation: Valves 1838A and 1838B are check valves in the lines from the spray additive tank to the ductors of the containment spray pumps. These valves are normally closed, and have an emergency function to open when the containment spray pumps are activated. This item must remain open until such time as the Licensee provides the extent to which these valves will be stroked and at what frequency.

2.4 Auxiliary Coolant System (A206738)

2.4.1 Code Relief - Category A Valves

2.4.1.1 Relief Request: Valve 744 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: Valve 744 cannot be full stroke exercised during normal plant operations but can be full stroke exercised at refueling outages. Part stroke exercising this valve during normal plant operations is also impractical.

Evaluation: Valve 744 is a RHR pumps outlet shutoff valve. This valve is also an open or closed only valve, therefore, part stroke exercising it is impractical during normal plant operation. This valve is a CIV - normally open and has an emergency function to close following the termination of the low pressure safety injection (LPSI) mode.

Full stroke exercising the valve quarterly is impractical in that a failure of the valve in the closed position nullifies the function of the residual heat removal (RHR) pumps in the LPSI mode, should an emergency occur, concurrent with the valve failure. The valve cannot be exercised at cold shutdowns because closing the valve

will terminate the normal RHR cooling mode (required to maintain cold shutdown). This valve however, will be full stroke exercised at refueling outages.

Therefore, it is recommended, due to the impracticality caused by plant design and per NRC guidelines, that relief be granted to full stroke exercise this valve at refueling outages in lieu of Section XI requirements.

2.4.1.2 Relief Request: Valve 732 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: Valve 732 is a passive CIV and is locked closed, therefore, exercising it is not necessary.

Evaluation: Valve 732 is a locked closed CIV in the steam generator lines, which is in the hot legs of the Reactor Coolant System (RCS). This is a normally closed valve, whose safety function is to close, therefore it can be considered a Passive Valve. It is recommended, per item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.5 Chemical and Control Volume System (A206745 and A206746)

2.5.1 Code Relief - Category A Valves

2.5.1.1 Relief Request: Valve 227 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: This valve is a passive CIV and is normally closed, which is required to be closed during an accident condition.

Evaluation: Valve 227 is a Containment Isolation Valve in the hot leg charging line to the Reactor Coolant System (RCS). This is a normally closed valve, whose safety function is to close, therefore, it can be considered a Passive Valve. It is recommended, per Item 2.1.5, that relief be granted from Section Xi requirements.

2.5.1.2 Relief Request: Valves 201 and 202 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: Full stroke exercising these valves quarterly, which are normally open valves, is impractical during normal plant operations, but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations is also impractical.

Evaluation: Valves 201 and 202 are manual letdown shutoff valves in the charging flow line to the nonregenerative heat exchanger. In addition, these valves are open or closed only valves, therefore, part stroke exercising them is impractical during normal plant operation. Full stroke exercising the valves quarterly is also impractical during normal plant operation because it would inhibit the control of the reactor coolant level control system. Closing these valves at any time during normal plant operation would shutdown the charging flow creating a potential for a low level reactor trip.

The Licensee presently plans to full stroke exercise these valves at refueling outages and also intends to investigate the possibility of full stroke exercising these valves at cold shutdowns. This item must remain open because to date, the Licensee has not provided sufficient technical justification to grant relief to a refueling outage frequency.

Until sufficient technical documentation is provided to justify not stroking these valves at cold shutdowns, it is recommended that this relief request be denied.

2.5.1.3 Relief Request: Valves 205 and 226 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: Full stroke exercising these valves quarterly, which are normally open valves, is impractical during normal plant operations but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations is also impractical.

Evaluation: Valves 205 and 226 are manual charging shutoff valves in the charging flow line to the regenerative heat exchanger. In addition, these valves are open or closed only valves, therefore, part stroke exercising them is impractical during normal plant operation. Full stroke exercising the valves quarterly is also impractical during normal plant operation because it would inhibit the control of the reactor coolant level control system. Closing these valves at any time during normal plant operation would shutdown the charging flow creating a potential for a low level reactor trip.

The Licensee presently plans to full stroke exercise these valves at refueling outages and also intends to investigate the possibility of full stroke exercising these valves at cold shutdowns. This item must remain open because to date, the Licensee has not provided sufficient technical justification to grant relief to a refueling outage frequency.

Until sufficient technical documentation is provided to justify not stroking these valves at cold shutdowns, it is recommended that this relief request be denied.

2.6 Reactor Coolant System (A206747)

2.6.1 Code Relief - Category A Valves

2.6.1.1 Relief Request: Valve 518 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1 for category A and see Item 2.3.3.1 for category C valves.

Licensee Basis for Relief Request: This valve is a passive CIV, and is normally closed, which is required to be closed during an accident condition.

Evaluation: Valve 518 is a category AC containment isolation check valve located in the nitrogen supply manifold of the waste disposal system to the pressure relief tank. This is a normally closed valve, whose safety function is to close, therefore, it can be considered a passive valve. It is recommended per item 2.1.5 that relief be granted from the stroking requirements of the Code.

2.6.1.2 Relief Request: Valves 580A and 580B will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are normally closed, which are required to be closed during an accident condition.

Evaluation: Valves 580A and 580B are containment isolation valves in the dead weight tester system and are used during calibration of the dead weight tester. They are normally closed valves, whose safety function is to close, therefore, they can be considered passive valves.

It is recommended, per item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.6.2 Code Relief - Category B Valves

2.6.2.1 Relief Request: Valves 535, 536, PCV-456 and PCV-455C will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: Full stroke exercising these valves is impractical during normal plant operations or at cold shutdowns, but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations or at cold shutdowns is also impractical.

1840 277

Evaluation: Valves 535, 536, PCV-456 and PCV-455C are part of the low temperature over-pressurization protection system. This item must remain open until such time as the Licensee reviews these valves to determine if they will be kept in the IST program or be included as technical specification requirements only. If it is decided that these valves are to remain in the IST program, the Licensee is expected to provide the necessary detailed justification for not full or part stroke exercising quarterly or at cold shutdowns. Thereby justify full stroke exercising at refueling outages as requested in the submittal.

Until such time as this decision is made and justification presented and evaluated, it is recommended that this relief request be denied.

2.7 Service Water System (A206739)

2.7.1 Code Relief - Category A Valves

2.7.1.1 Relief Request: Valves SWN-41 (5 valves), and SWN-44 (5 valves) will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: Full stroke exercising these valves is impractical during normal plant operation, but they can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operation is also impractical.

Evaluation: SWN-41 (5 valves) and SWN-44 (5 valves) are manually operated inlet and return valves respectively, to the containment building ventilation cooling coils. In addition, these valves are CIV's. The valves are normally open, and are manually closed at some time following the accident condition. Full or part stroke exercising the valves quarterly to the closed position, during normal plant operation, is impractical, in that doing so would shutoff service water to the coolers and most likely result in high containment temperature. The Licensee plans to full stroke exercise these valves at refueling outages. This item must remain open however, until such time as the Licensee reviews the valves and determines if they will be cycled closed at cold shutdowns.

2.7.1.2 Relief Request: Valves SWN-71 (5 valves) will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.1.1.

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Licensee Basis for Relief Request: Full stroke exercising these valves is impractical during normal plant operation, but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operation is also impractical.

Evaluation: SWN-71 (5 valves) are return valves from the recirculation fan motor coolers. In addition, these valves are CIV's. The valves are normally open, and are manually closed at some time following the accident condition. Full or part stroke exercising the valves quarterly to the closed position, during normal plant operation, is impractical, in that doing so would shutoff service water to the motor coolers most likely resulting in fan motor damage. The Licensee plans to full stroke exercise these valves at refueling outages. This item must remain open however, until such time as the Licensee reviews the valves and determines if they will be cycled closed at cold shutdowns. Therefore, until sufficient technical justification is provided for not stroke exercising these valves at cold shutdowns, it is recommended that this relief request be denied.

#2.7.1.3 Relief Request: Valves SWN-42 (5 valves) and SWN-43 (5 valves) will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: Valves SWN-42 and SWN-43 (5 valves each) are passive CIV's and are normally closed, which are required to be closed during an accident condition.

Evaluation: SWN-42 (5 valves) and SWN-43 (5 valves) are designated as CIV's and are located in the fan cooler drain lines. Emergency function is to close, therefore, they can be considered passive valves. It is recommended, per item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.7.2 Code Relief - Category B Valves

#2.7.2.1 Relief Request: Valves FCV-1111 and FCV-1112 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be exercised during normal plant operations or at cold shutdowns, but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations or at cold shutdowns is also impractical.

Evaluation: Valves FCV-1111 and FCV-1112 are in the normal service water supply to the conventional plant equipment. The Licensee plans to full stroke exercise these valves at refueling outages, but has not provided sufficient technical justification for not full or part stroke exercising them during normal power operations

#Requires NRC Review

or at cold shutdowns. This item must remain open until such time as the Licensee reviews these valves and provides adequate technical justification for not exercising these valves during normal power operations or cold shutdowns.

It is recommended that this relief request be denied at this time.

2.8 Post Accident Containment Air Sampling System (Special Pullout)

2.8.1 Code Relief - Category A Valves

2.8.1.1 Relief Request: Valves 1875A, 1875B, 1875C, 1875D, 1875E, 1875F, 1875G, 1875H, and 1875J will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are normally closed, which are required to be closed during an accident condition.

Evaluation: Valves 1875A thru J are Containment Isolation Valves in the post accident containment air sampling system. The valves are normally closed valves whose emergency function is to close, therefore, they can be considered passive valves. It is recommended, per item 2.1.5. that relief be granted from the stroking requirements of the Code.

2.9 Hydrogen Recombiner System (A206741)

2.9.1 Code Relief - Category A Valves

2.9.1.1 Relief Request: Valves 1882A, 1876A, 1875A, 1876B, and 1875B will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are not required to change their position for any safety function.

Evaluation: Vales 1882-9, 1876-9, 1875-9, 1876-8, and 1875-8 are CIV's in the hydrogen recombiner system. The valves are normally closed valves, whose emergency function is to close, therefore, they can be considered passive valves. It is recommended, per Item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.10 Waste Disposal System (A206737) and (A206743)

2.10.1 Code Relief - Category A Valves

2.10.1.1 Relief Request: Valve 1616 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1 for category A and see Item 2.3.3.1 for category C valves.

Licensee Basis for Relief Request: This valve is a Passive CIV, and is normally closed, which is required to be closed during an accident condition.

Evaluation: Valve 1616 is a category AC Containment Isolation Check Valve located in the nitrogen supply manifold of the waste disposal system to the pressure relief tank. This is a normally closed valve, whose safety function is to close, therefore, it can be considered a Passive Valve. It is recommended, per item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.11 Main Steam System (A206734)

2.11.1 Code Relief - Category B Valves

#2.11.1.1 Relief Request: Valves MS-41 and MS-42 will be stroked every 6 months when the auxiliary feedwater pumps are in use.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be stroked every 3 months according to Section XI requirements but will be stroked at 6 month intervals when the auxiliary feedwater pumps are used.

Evaluation: MS-41 and MS-42 are shutoff valves in the steam supply lines to the steam driven feedwater pump's turbine. Presently this auxiliary feedwater pump is not in the IST program. The pump is run at 6 month intervals and the subject valves, exercised at this interval as well. Testing of these valves is tied with the possibility of the Licensee including the auxiliary feedwater pump in the IST program. This item must remain open until such time as the Licensee reviews this auxiliary feedwater pump for possible inclusion in the IST program and the testing of this pump is defined. Therefore, it is recommended, that until the review is complete, the above relief request should be denied.

2.11.1.2 Relief Request: Valves PCV-1310A and PCV-1310B will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be full stroke exercised during normal plant operations or at cold shutdowns, but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations or at cold shutdowns is also impractical.

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Evaluation: Valves PCV-1310A and PCV-1310B are Air Operated Shutoff Valves in the steam supply lines to the turbine driven auxiliary feedwater pump. The Licensee plans to full stroke exercise these valves at refueling outages, but has not provided sufficient technical justification for not full or part stroke exercising them during normal plant operations or cold shutdowns.

This item must remain open until such time as the Licensee reviews these valves and provides sufficient technical information to justify not exercising these valves quarterly or at cold shutdowns.

It is recommended that this relief request be denied at this time.

2.12 Boiler Feedwater System (A206736)

2.12.1 Code Relief - Category B Valves

#2.12.1.1 Relief Request: Valves FCV-427L, FCV-437L, FCV-417L, and FCV-447L will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis for Relief Request: These valves cannot be full stroke exercised during normal plant operations or at cold shutdowns, but can be full stroke exercised at refueling outages. Part stroke exercising these valves during normal plant operations or at cold shutdowns is also impractical.

Evaluation: Valves FCV-427L, FCV-437L, FCV-417L, and FCV-447L are shutoff valves in the feedwater regulator bypass lines (low flow control path). The Licensee was requested and has agreed to review these valves to determine if full or part stroke exercising is practical on a quarterly basis during normal plant operations. The Licensee presently plans to full stroke exercise these valves at refueling outages. This item must remain open until such time as the Licensee provides sufficient technical justification for not exercising these valves during normal plant operations or at cold shutdowns. At this time, it is recommended that this relief request be denied.

2.12.2 Code Relief - Category C - Check Valves

2.12.2.1 Relief Request: Valves BFD-79 (4 in all), will be full stroke exercised at refueling outages and part stroke exercised at cold shutdowns in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full or part stroke exercised quarterly during normal plant operations and also cannot be full stroke exercised at cold shutdowns. These

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1840 282

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valves can be full stroke exercised at refueling outages and part stroke exercised at cold shutdowns.

Evaluation: BFD-79 (4 valves) are Check Valves in the auxiliary feedwater lines at the interface of the main feedwater line. The Check Valves are kept closed by the main feedwater system pressure during power operations. Their emergency function is to open when the auxiliary feedwater pumps are activated to supply emergency feedwater from the Condensate Storage Tank (CST). Exercising these Check Valves quarterly is impractical in that the auxiliary feedwater pumps must be activated to flow ambient temperature water from the CST to the Steam Generators (SG) which can result in thermal shocking the SG tubing.

Full stroke exercising at cold shutdowns is impractical in that the high flowrates required for full stroke exercising make it difficult to control water levels in the SG's. Excessively high water levels in the SG's can result in water in the steamlines, which can lead to turbine damage when power operations are resumed.

The Licensee presently plans to part stroke exercise these Check Valves at cold shutdowns and full stroke exercise them at refueling outages.

The Licensee has adequately demonstrated the impracticality due to plant design of exercising the subject Check Valves quarterly and of full stroke exercising them at cold shutdowns. Therefore, it is recommended, per NRC guidelines, that relief be granted as requested.

2.12.2.2. Relief Request: Valves BFD-39, BFD-34, BFD-37, BFD-35, BFD-42, and BFD-40 will be full stroke exercised at refueling outages and part stroke exercised at cold shutdowns in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full or part stroke exercised quarterly during normal plant operations and also cannot be full stroke exercised at cold shutdowns. These valves can be full stroke exercised at refueling outages and part stroke exercised at cold shutdowns.

Evaluation: BFD-39 and BFD-34 are auxiliary feedwater pump (motor driven) discharge check valves. BFD-35, BFD-37, BFD-40, and BFD-42 are Check Valves in the auxiliary feedwater supply lines from the motor driven auxiliary feedwater pumps that are redundant isolation valves in series with check valves FBD-79. The subject Check valves are normally closed and have an emergency function to open when the auxiliary feedwater pumps (motor driven) are activated to provide condensate storage tank water to the steam generators. It should be noted that the motor driven auxiliary feedwater pump test recirculation lines are upstream, of these Check Valves thus precluding any exercising during monthly pump tests.

Part stroke exercising at cold shutdowns and full stroke exercising at refueling outages is justified, based on the evaluation given for the BFD-79's, see item 2.12.2.1. Therefore, it is recommended per NRC guidelines, that relief be granted as requested.

2.12.2.3 Relief Request: Valves BFD-31 and BFD-47 (4 valves) will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full or part stroke exercised quarterly during normal plant operations and also can neither be full or part stroke exercised at cold shutdowns.

Evaluation: Valve BFD-31 is an auxiliary feedwater pump (turbine driven) discharge Check Valve. BFD-47 (4 valves) are in the auxiliary feedwater supply line from the turbine driven pump and are redundant isolation valves in series with the valves designated BFD-79.

The subject Check Valves are normally closed and have an emergency function to open when the turbine driven auxiliary feedwater pump is activated to provide condensate storage tank water to the steam generators. It should be noted that the pumps test recirculation line is upstream of the Check Valves thus precluding any exercising during periodic pump tests.

Part stroke exercising at cold shutdowns is impractical in this case due to the fact that there is no steam available for stroking (either full or part stroking). Full stroke exercising at refueling outages is justified, based on the evaluation given for the BFD-79 valves, see item 2.12.2.1. Therefore, is is recommended per NRC guidelines, that relief be granted as requested.

2.13 Condensate and Boiler Feed Pump System (A206735)

2.13.1 Code Relief - Category C - Check Valves

2.13.1.1 Relief Request: Valves CT-32 and CT-26 will be full stroke exercised at refueling outages and part stroke exercised at cold shutdowns in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: These valves cannot be full or part stroke exercised quarterly during normal plant operations and also cannot be full stroke exercised at cold shutdowns. These valves can be full stroke exercised at refueling outages and part stroke exercised at cold shutdowns.

Evaluation: Valves CT-32 and CT-26 are inlet Check Valves to the motor driven auxiliary feedwater pumps from the condensate storage water tank. The Check Valves are normally closed and have an emergency function to open when the motor driven auxiliary feedwater pumps are activated to provide condensate storage tank water to the steam generators. The valves are presently part stroke exercised during pump testing at a frequency greater than the Code required. In that these Check Valves are upstream, and in series with the BFD-79s, full stroke exercising quarterly and at cold shtudowns is considered impractical. This is based on the evaluation given for the BFD-79 valves, see item 2.12.2.1. Therefore, it is recommended, per NRC guidelines, that relief be granted as requested.

2.13.1.2 Relief Request: Valve CT-29 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.3.1.

Licensee Basis for Relief Request: This valve cannot be full or part stroke exercised quarterly during normal plant operations and also can neither be full or part stroke exercised at cold shutdowns.

Evaluation: Valve CT-29 is an inlet Check Valve to the turbine driven auxiliary feedwater pump from the condensate storage water tank. The Check Valve is normally closed, and has an emergency function to open when the turbine driven auxiliary feedwater pump is activated to provide condensate storage tank water to the steam generators. Part stroke exercising this valve, like CT-32 and CT-26 (per item 2.13.1.1) is upstream and in series with the BFD-79 valves, so full stroke exercising quarterly and at cold shutdowns is also considered impractical. This is based on the evaluation given for the BFD-79 valves, see item 2.12.2.1. Therefore, it is recommended, per NRC guidelines, that relief be granted as requested.

#2.14 Miscellaneous CIV's

2.14.1 Code Relief - Category A Valves

2.14.1.1 Relief Request: Valves 85A, 85B, 85C, 85D, 95A, 95B, 95C, 95D, MV-17 (2 valves), SA-24 (2 valves), 1170, 1171, 1172, and 1173 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are normally closed, which are required to be closed during an accident condition.

Evaluation: Valves 85A, 85B, 85C, 85D, 95A, 95B, 95C, 95D, MV-17 (2 valves), SA-24 (2 valves) 1170, 1171, 1172, and 1173 are Miscellaneous Containment Isolation Valves (CIV's). Valves 85A, 85B,

#P+ID's were not available to determine whether or not NRC Review is required

85C, 85D, 95A, 95B, 95C, and 95D are located in the 80' elevation personnel airlock. It should be noted that the A and B designated valves in each case are Check Valves. Valves MV-17 (2 valves) and SA-24 (2 valves) are city water to containment and service air to containment valves respectively. Valves 1170, 1171, 1172, and 1173 are valves located in the containment purge system. All the above valves are normally closed during power operations, and their safety function is to close. As such, these valves are considered passive. Therefore, it is recommended, per item 2.1.5, that relief be granted from the strokng requirements of the Code.

2.14.1.2 Relief Request: Valves 1814A, 1814B, and 1814C will satisfy Category E requirements set forth in IWV-3700, but since they are CIV's, these valves will also satisfy the Category A leak testing requirements of IWV-3420. They will be exempt from the exercising requirements of IWV-3410.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves will satisfy the above requirements because of their locked status.

Evaluation: Valves 1814A, 1814B, and 1814C are CIVs located in the containment pressure sensing instrument lines. The Licensee plans to review these valves for cycling requirements. Therefore, until such time as the Licensee provides sufficient technical information for the cycling requirements, it is recommended that this relief request be denied.

2.14.1.3 Relief Request: Valves UH-43 and UH-44 will not be stroked to the requirements of Section XI.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: These valves are passive CIV's and are locked closed, therefore exercising them is not necessary.

Evaluation: Valves UH-43 and UH-44 are locked closed CIVs in the auxiliary steam system. They are normally closed, during power operation, and have a safety function to close. Therefore, these valves are considered passive valves. It is recommended then, per item 2.1.5, that relief be granted from the stroking requirements of the Code.

2.14.1.4 Relief Request: Valve PCV-1228 will be full stroke exercised at refueling outages in lieu of Section XI requirements.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis for Relief Request: This valve cannot be full stroke exercised during normal plant operations or at cold shutdowns, but can be full stroke exercised at refueling outages. Part stroke exercising this valve during normal plant operations or at cold shutdowns is also impractical.

Evaluation: Valve PCV-1228 is a normally open CIV in the Instrument Air System (Post Accident Venting Supply). The valve design is such that is can be only full stroke exercised (an open or closed only valve), therefore part stroke exercising it is impractical both during normal plant operation or cold shutdown.

Full stroke exercising the valve quarterly during power operations or at cold shutdowns is considered impractical in that it shuts off the operating air supply to the valves inside containment, which are required to be operational during both power and cold shutdown operations.

The Licensee plans to full stroke exercise the valve at refueling outages. Therefore, it is recommended that relief be granted to full stroke exercise this valve at refueling outages in lieu of Section XI requirements.

2.14.1.5 Relief Request: Valve IA-39 will satisfy the category A leak testing requirements of IWV-3420 and will be exempt from the exercising requirement of IWV-3410 and IWV-3520.

Code Requirement: See Code Requirement Item 2.3.1.1 for category A and for category C valves see Item 2.3.3.1.

Licensee Basis for Relief Request: These valves are check valves that serve as containment isolation valves and as such are categorized as category AC. Accordingly, these valves will satisfy the category A leak testing requirements of IWV-3420. Existing plant design and construction provides no means for indication or verification of check valve disk motion in either direction. However, proper position for satisfying the containment isolation function is confirmed by acceptable category A valve leak rate testing results. Therefore, these category AC check valves will be exempt from the exercising requirement of IWV-3410 and IWV-3520.

Evaluation: IA-39 is a CIV (check valve) in the instrument air system (Post Accident Venting Supply). Exercising the valve closed would require shuting off the operating air supply to the other valves which are required to be operational during power and cold shutdown operations. Based on this, and based on the reasoning given by the Licensee in his "Basis for Relief Request," it is recommended that relief be granted from the Code required exercise frequency.

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3.0 COLD SHUTDOWN TESTING OF VALVES

3.1 General:

3.1.1 Valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be full-stroke exercised during cold shutdowns. Full-stroke exercising during cold shutdowns for valves not full-stroke exercised during plant operation shall be on a frequency determined by the intervals between shutdowns as follows: for intervals of 3 months or longer, exercise during each shutdown; for intervals of less than 3 months, full-stroke exercise is not required unless 3 months have passed since last shutdown exercise.

The intent of this section is to satisfy the requirements of the NRC letter dated January 13, 1978, i.e., "NRC Staff Guidance For Preparing Pump and Valve Testing Program Descriptions and Associated Relief Requests Pursuant to 10 CFR 50.55 a(g)," specifically section 5, page 7.

3.2 Safety Injection System (A206744)

3.2.1 Category B Valves

3.2.1.1 Valves: 856B and 856F

Code Requirement: See Code Requirement Item 2.3.2.1

Licensee Basis: These valves cannot be full-stroke exercised quarterly during normal plant operation in that if the valves failed in the open position during normal plant operation and a loss of coolant accident (LOCA) were to occur, a potential for steam binding could take place, which would prevent an adequate flow of reactor cooling water from reaching the core.

Evaluation: Valves 856B and 856F are shut-off valves in the Safety Injection (SI) lines leading to the hot legs of the Reactor Coolant System (RCS), and are valves that are only capable of being full-stroke exercised. Part-stroke exercising these valves would be impractical during normal plant operation.

The valves are normally closed and have a safety function to open approximately 24 hours after the cold leg injection has been initiated. Full-stroke exercising the valves quarterly while the plant is at normal operating power is impractical in that a failure in the closed position, concurrent with a loss of coolant accident (LOCA), can result in a steam-binding affect which would prevent adequate cooling water from reaching the core. It is recommended, per NRC guidelines, that the Licensee be allowed to full-stroke exercise these valves at cold shutdowns.

3.2.2 Category C - Check Valves

3.2.2.1 Valves: 897A, 897B, 897C and 897D

Code Requirement: See Code Requirement Item 2.3.2.1

Licensee Basis: These check valves cannot be full or part-stroke exercised every 3 months while the plant is in normal operation. The Reactor Coolant System (RCS) operates at approximately 2200 psig which acts to keep them closed. These check valves will be full-stroke exercised at cold shutdowns.

Evaluation: Valves 897A, 897B, 897C and 897D are pressure isolation check valves in the cold leg injection lines to the RCS and are at the interface of the RCS and Safety Injection System (SIS). The valves are held closed by the RCS pressure during normal power operation, and their emergency function is to open to permit flow from the SIS into the RCS following a LOCA. 897A and 897C are in the flowpaths from the High Pressure Safety Injection (HPSI) pumps, and 897A thru 897D are in the flowpaths from the recirculation pumps, RHR pumps, and from the respective accumulators.

The system configuration is such, that the only practical way the valves can be exercised is by putting flow through them from one of the SI pumps or accumulators. During normal power operations, the RCS pressure is approximately 2200 psig. None of the forementioned pumps or accumulators have the pressure capability to overcome this RCS pressure in order to establish flow through the check valves. All four check valves will be full-stroke exercised during each cold shutdown when the residual heat removal mode of cooling is in operation.

It is recommended then, due to the impracticality caused by plant design, that the Licensee be allowed to full-stroke exercise these valves at cold shutdowns.

3.2.2.2 Valves: 838A, 838B, 838C and 838D

Code Requirement: See Code Requirement Item 2.3.3.1

Licensee Basis: These check valves cannot be full or part-stroke exercised every 3 months while the plant is in normal operation. The Reactor Coolant System (RCS) operates at approximately 2200 psig, which acts to keep check valves 897A, B, C, D closed. The 897 valves are downstream of and in the respective flowpaths of the subject check valves. These 838 valves will be full-stroke exercised at cold shutdowns.

Evaluation: Pressure isolation valves 838A, 838B, 838C and 838D are in the cold leg injection lines from the recirculation pumps and Residual Heat Removal (RHR) pumps. The valves are held closed by the RCS pressure during normal power operation, and their emergency function is to open to permit flow from the RHR (LPSI Mode) or recirculation pumps to the RCS following a LOCA. 838A thru 838D

are upstream and in series with 897A thru 897D respectively, in that 897A thru 897D cannot be opened quarterly, the evaluation for 897A thru 897D applies for the subject check valves. 838A thru 838D will be full stroke exercised at cold shutdowns when the residual heat removal mode of cooling is in operation.

It is recommended then, due to the impracticality caused by plant design, that the Licensee be allowed to full stroke exercise these valves at cold shutdowns.

3.3 Auxiliary Coolant System (A206738)

3.3.1 Category A Valves

3.3.1.1 Valves: 797, 784, and FCV-625

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis: These valves cannot be full stroke exercised quarterly during normal plant operation. To do so would damage the Reactor Coolant (RC) pumps by causing loss of bearing cooling water.

Evaluation: Valves 797, 784, and FCV-625 are all containment isolation valves in the component cooling system that supplies coolant water to the RHR pump's bearing oil coolers and thermal barriers. The valve is normally open and has an emergency function to close following the receipt of a containment isolation signal. This valve is also an open or closed only valve, therefore, part stroke exercising it is impractical. Full stroke exercising the valve quarterly while the plant is at normal operating power is also impractical in that doing so, shuts off coolant water to the reactor coolant pumps bearing oil cooler and can result in damage to the RC pump bearings. The valve will be full stroke exercised at those cold shutdown conditions (includes refueling) where the RC pumps can be shutdown.

Valve 784 is a CIV in the component cooling system on the return leg from the RC pump motor bearing coolers. The valve is normally open and has an emergency function to close upon receipt of a containment isolation signal. Valve FCV-625 is a CIV in the component cooling system on the return leg from the thermal barriers. The valve is also normally open and has an emergency function to close upon receipt of a containment isolation signal.

Both valves 784 and FCV-625, like valve 797, are open or closed only valves and are impractical to full stroke exercise quarterly and part stroke exercised during normal plant operation. Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise these valves at cold shutdowns.

3.3.1.2 Valve: 741

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis: None provided.

Evaluation: Valve 741 is a category AC check valve and a containment isolation valve in the outlet line from the Residual Heat Removal (RHR) pumps. This valve is normally closed, and its safety related function is to open when the RHR pumps are used in the LPSI mode of emergency cooling. This valve will be full stroke exercised at cold shutdowns during the normal shutdown cooling mode of operation of the RHR pumps. However, this item must remain open until such time as the Licensee determines if the RHR monthly pump tests at miniflow conditions full stroke exercises the subject check valve quarterly.

3.3.2 Category B Valves

3.3.2.1 Valves: 822A and 822B

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis: These valves cannot be exercised quarterly during normal plant operation. To do so may divert flow from the component cooling system via these 12" valves.

Evaluation: Valves 822A and 822B are shutoff valves in the component cooling system on the return leg from the residual heat exchangers. The valves are normally closed and have an emergency function to open in order to allow component cooling water flow to the residual heat exchangers. These valves are also open or closed only valves therefore, part stroke exercising them is impractical.

The Licensee presently plans not to full stroke exercise these valves quarterly in that doing so would divert flow from the component cooling system. This could result in a reduced cooling flow to the RC pump coolers and thermal barriers which can result in creating a potential for overheating and damaging the RC pumps. These valves will be full stroke exercised at cold shutdowns.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise these valves at cold shutdowns.

3.3.2.2 Valve: 769

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis: This valve cannot be full stroke exercised quarterly during normal plant operation. To do so would damage the reactor coolant pumps by causing loss of bearing cooling water.

Evaluation: Valve 769 is a shutoff valve in that part of the component cooling system that supplies coolant water to the RHR pump's bearing oil coolers and thermal barriers. The valve is normally open and has an emergency function to close following the receipt of a containment isolation signal. This valve is also an open or closed only valve, therefore, part stroke exercising it is impractical. Full stroke exercising the valve quarterly while the plant is at normal operating power is also impractical in that doing so, shuts off coolant water to the reactor coolant (RC) pumps bearing oil cooler and can result in damage to the RC pump bearings. The valve will be full stroke exercised at those cold shutdown conditions (includes refueling) where the RC pumps can be shutdown.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise this valve at cold shutdowns.

3.3.2.3 Valve: 786

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis: This valve cannot be full stroke exercised quarterly during normal plant operation. To do so would damage the reactor coolant pumps by causing loss of bearing cooling water.

Evaluation: Valve 786 is a shutoff valve in the component cooling system on the return leg from the RCP motor bearing coolers. The valve is normally open and has an emergency function to close upon receipt of a containment isolation signal. This valve is also an open or closed only valve therefore, part stroke exercising it is impractical. Full stroke exercising the valve quarterly while the plant is at normal operating power is also impractical in that doing so shuts off coolant water to the Reactor Coolant (RC) pumps bearing oil cooler and can result in damage to the RC pump bearings. The valve will be full stroke exercised at those cold shutdown conditions (includes refueling) where the RC pumps can be shutdown.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise this valve at cold shutdowns.

3.3.2.4 Valve: 789

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis: This valve cannot be full stroke exercised quarterly during normal plant operation. To do so would damage the Reactor Coolant pumps by causing loss of bearing cooling water.

Evaluation: Valve 789 is a shutoff valve in the component cooling system on the return leg from the thermal barriers. The valve is normally open and has an emergency function to close upon receipt

of a containment isolation signal. This valve is also an open or closed only valve, therefore, part stroke exercising it is impractical. Full stroke exercising the valve quarterly while the plant is at normal operating power is also impractical in that doing so, shuts off coolant water to the Reactor Coolant (RC) pumps bearing oil cooler and can result in damage to the RC pump bearings. The valve will be full stroke exercised at those cold shutdown conditions (includes refueling) where the RC pumps can be shutdown.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise this valve at cold shutdowns.

3.4 Chemical and Volume Control System (A206745 and A206746)

3.4.1 Category A Valves

3.4.1.1 Valve: 222

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis: This valve cannot be full stroke exercised during normal plant operation in that if the valve were in the closed position during normal plant operation, a loss of Reactor Coolant (RC) pump seal water flow would result, thus damaging the RC pumps. The RC pumps must be off in order to full stroke exercise at cold shutdowns.

Evaluation: Valve 222 is a shutoff valve in the RC pump seal water return line. In addition, this valve is an open or closed only valve, therefore, part stroke exercising it is impractical. Full stroke exercising the valve quarterly during normal plant operation is also impractical in that this action would perturb reactor coolant pump seal water flow and thus could damage the seals as a result. This valve will be full stroke exercised at those cold shutdowns when the RC pumps are not in use.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise this valve at cold shutdowns.

3.4.1.2 Valves: 241A, 241B, 241C, 241D, 250A, 250B, 250C, and 250D.

Code Requirement: See Code Requirement Item 2.3.1.1

Licensee Basis: These valves cannot be fullstroke exercised during normal plant operation in that if the valves were in the closed position during normal plant operation, a loss of RC pump seal water would result, thus damaging the RC pumps. The RC pumps must be off in order to full stroke exercise at cold shutdowns.

Evaluation: Valves 241A, 241B, 241C, 241D, 250A, 250B, 250C, and 250D are shutoff valves in the charging lines to the RC pump seals.

In addition, these valves are open or closed only valves, therefore, part stroke exercising them is impractical. Full stroke exercising the valves quarterly during normal plant operation is also impractical in that this action would perturb RC pump seal water flow and thus could damage the seals as a result. These valves will be full stroke exercised at those cold shutdowns when the RC pumps are not in use.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise these valves at cold shutdowns.

3.4.1.2 Valves: 241A, 241B, 241C, 241D, 250A, 250B, 250C, and 250D.

Code Requirement: See Code Requirement Item 2.3.1.1.

Licensee Basis: These valves cannot be full stroke exercised during normal plant operation in that if the valves were in the closed position during normal plant operation, a loss of RC pump seal water would result, thus damaging the RC pumps. The RC pumps must be off in order to full stroke exercise at cold shutdowns.

Evaluation: Valves 241A, 241B, 241C, 241D, 250A, 250B, 250C, and 250D are shutoff valves in the charging lines to the RC pump seals. In addition, these valves are open or closed only valves, therefore, part stroke exercising them is impractical. Full stroke exercising the valves quarterly during normal plant operation is also impractical in that this action would perturb RC pump seal water flow and thus damage the seals as a result. These valves will be full stroke exercised at those cold shutdowns when the RC pumps are not in use.

Therefore, it is recommended, per NRC guidelines, that the Licensee be allowed to full stroke exercise these valves at cold shutdowns.

3.5 Boiler Feedwater System (A206736)

3.5.1 Category B Valves

3.5.1.1 Valves: FCV-427, FCV-417, FCV-437, and FCV-447.

Code Requirement: See Code Requirement Item 2.3.2.1.

Licensee Basis: These valves cannot be full stroke exercised quarterly during normal plant operation. Full stroking would cause a reactor trip. The reactor trip would be caused by a loss of feedwater.

Evaluation: Valves FCV-427, FCV-417, FCV-437, and FCV-447 are the main feedwater regulators which are open during power operations to control the main feedwater supply to the steam generators.

Exercising these valves quarterly is impractical during power operations in that it would shutoff the feedwater to the steam generators, which could result in a reactor trip condition. The Licensee is proposing to full stroke exercise these valves at cold shutdowns.

The Licensee has adequately demonstrated the impracticality of full stroke exercising these valves quarterly. Therefore, it is recommended, per NRC guidelines, that the licensee be allowed to full stroke exercise these valves at cold shutdowns. Presently, the timing for these valves, has not been addressed.

3.6 Main Steam System (A206734)

3.6.1 Category B Valves

3.6.1.1 Valves: MS-1-21, MS-1-22, MS-1-23, and MS-1-24.

Code Requirement: See Code Requirement Items 2.3.2.1 and 2.3.3.1.

Licensee Basis: These Main Steam Isolation Valves (MSIVs) are categorized as BC. They are stop check type valves with pneumatic operators holding the valve disks out of the main steam flow path. The MSIVs will satisfy the exercising requirements of IWV-3410 but, as permitted by IWV-3410(b)(1), will be full stroke exercised only during cold shutdown at refueling outages as presently required by the plant technical specifications. Part stroke exercising of these valves during normal plant operation is not practical.

Evaluation: These MSIVs cannot be full stroke or part stroke exercised quarterly because to do so would cause a reactor trip. The reactor trip would be caused by the turbine tripping off the line. The turbine trip would be based on receiving a Valve Position Change Signal. The Licensee has adequately demonstrated the impracticality of full stroke exercising these valves quarterly. Therefore, it is recommended, per NRC guidelines, that the licensee be allowed to full stroke exercise these valves at cold shutdowns. Presently the timing for these valves has not been addressed.

4.0 PROGRAM BREAKDOWN

4.1 Safety Injection System (A206744)

4.1.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%869A	AE	880A	B
%869B	AE	880B	B
%851A	A	880C	B
%851B	A	880D	B
%885A	A	880E	B
%885B	A	880F	B
%888A	A	880G	B
%888B	A	880H	B
%878A	AE	880J	B
%878B	AE	880K	B
866A	B	846	E
866B	B	1860	E
866C	B	1806A	E
866D	B	1806B	E
887A	B	1841	E
887B	B	1839A	E
889A	B	1839B	E
889B	B	1823F	E
%876A	B	873B	E
%876B	B		
1802A	B		

4.1.2 The following are valves that were not listed in the IST submittal and were agreed upon to be considered safety related and therefore will be added to the resubmittal as shown.

Valve	Category	Valve	Category
886A	C	848A	E
886B	C	848B	E
881	C	849A	C
865A	E	849B	C
865B	E	852A	C
879A	C	852B	C
879B	C	1838A	C
847	C	1838B	C

% 876A and 876B. The licensee will review valve alignment required to test these valves to see if the system is placed in a non-aligned situation.

% Valves 869A&B, 851A&B, 885A&B, 888A&B and 878A&B will meet the Code for stroking only.

1840 296

4.1.3 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve	Valve
1805	891C
882	891D
1810	855
894A	1828
894B	1815
894C	892A
894D	892B
898	892C
891A	892D
891B	

4.1.4 The following are valves in the IST submittal that cannot be full stroke exercised every 3 months but will meet the requirements of Section XI. Additional information is required be the NRC to verify the impracticality of full stroke exercising every 3 months.

Valve	Category	Valve	Category
856B	B	897D	C
856F	B	838A	C
897A	C	838B	C
897B	C	838C	C
897C	C	838D	C

4.1.5 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+867A	AC	843	B
+867B	AC	857A	C
+850A	AE	857B	C
+850B	AE	857C	C
+859A	AE	857D	C
+859C	AE	857G	C
+863	A	857H	C
+4312	AC	857M	C
+743	AE	857F	C
+1870	AE	857E	C
856A	B	857L	C
856C	B	857K	C
856D	B	857J	C
856E	B	895A	C

+ General Relief Request 2.2.1

1840 297

Valve	Category	Valve	Category
842	B	895B	C
895C	C	849B	C
895D	C	852A	C
886A	C	852B	C
886B	C	1838A	C
881	C	1838B	C
879A	C	1831	B
879B	C	1821	B
847	C	1822A	B
849A	C	1822B	B

4.2 Auxiliary Coolant System (A206738)

4.2.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%796	A	735A	E
%793	A	735B	E
%798	A	1819	E
%791	A	832	E
745A	B	761A	C
745B	B	761B	C
HCV-638	B	761C	C
HCV-640	B	758	C
739A	E	755A	C
739B	E	755B	C
742	E	%746	B
		%747	B

4.2.2 The following are valves that were not listed in the IST submittal and were agreed upon to be considered safety related and therefore will be added to the resubmittal as shown.

Valve	Category	Valve	Category
761A	C	758	C
761B	C	755A	C
761C	C	755B	C

4.2.3 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

% 746 and 747. Licensee will perform a review to determine what position valve to be in during normal operation. Currently these valves are closed during operation.

% 796, 793, 798 and 791. Will meet the Code for stroking only.

Valve	Valve
730	1873D
731	831
734A	782
734B	783A
734E	783B
734F	783C
733C	783D
RCV-017	785B
756A	792
756B	819A
1873A	819B
1873B	835
1873C	1036

4.2.4 The following are valves in the IST submittal that cannot be full stroke exercised every 3 months but will meet the requirements of Section XI. Additional information is required by the NRC to verify the impracticality of full stroke exercising every 3 months.

Valve	Category	Valve	Category
+741	AC	822B	B
+797	A	769	B
+784	A	786	B
+FCV-625	A	789	B
822A	B		

4.2.5 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+744	A	+732	AE

4.3 Chemical and Volume Control System (A206745) (A206746)

4.3.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
200A	B	200C	B

4.3.2 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

+ General Relief Request 2.2.1

1840 299

Valve	Valve
1100	LCV-112A
1247	387
1133	391
PCV-1049	343B
1269	323B
1679	TCV-149
1109	309
1104	311A
1119	340A
1120	346
HCV-133	352
212	269
LCV-459	FCV-111B
204A	LCV-112C
204B	FCV-110B
213	293
HCV-123	FCV-110A
215	LCV-112B
PCV-135	288
271	333
310	364
313	367A
HCV-104	367B
358	HCV-105
372	366
295	237
285	281
FCV-111A	273
265	276
268	359
218	371
203	1263
264	1264
231	1102
234	

4.3.3 The following are valves in the IST submittal that cannot be full stroke exercised every 3 months but will meet the requirements of Section XI. Additional information is required by the NRC to verify the impracticality of full stroke exercising every 3 months.

Valve	Category	Valve	Category
+241A	A	+250B	A
+241B	A	+250C	A
+241C	A	+250D	A
+241D	A	+222	A
+250A	A		

1840 300

+ General Relief Request 2.2.1

4.3.4 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+226	A	+202	A
+205	A	+227	A
+201	A		

4.4 Reactor Coolant System (A206747)

4.4.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%549	A	%519	A
%548	A	PCV-464	C
%550	A	PCV-466	C
%552	A	PCV-468	C

4.4.2 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve
PCV-455A
PCV-455B

4.4.3 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+518	AC	535	B
+580A	A	PCV-456	B
580B	A	PCV-455C	B
536	B		

4.5 Service Water System (A206739)

4.5.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%SWN-51	A	FCV-1176	B
(5 valves)		FCV-1176A	B

+ General Relief Request 2.2.1
% These valves will meet the Code for stroking only.

1840 301

Valve	Category	Valve	Category
TCV-1104	B	SWN-1 (6 check valves)	C
TCV-1105	B		

4.5.2 The following are valves that were not listed in the IST submittal and were agreed upon to be considered safety related and therefore will be added to the resubmittal as shown.

Valve	Category
SWN-1 (6 check valves)	C

4.5.3 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve	Valve
SWN-31	SWN-4
SWN-29	SWN-5
SWN-30	SWN-6
SWN-33 (2 valves)	SWN-7
SWN-32	SWN-27 (2 valves)
SWN-39	SWN-70 (2 valves)
SWN-38	SWN-63 (3 valves)
SWN-40 (2 valves)	SWN-36 (2 valves)

4.5.4 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+SWN-41 (5 valves)	A	+SWN-43 (5 va'ves)	A
+SWN-44 (5 valves)	A	FCV-111	B
		FCV-1112	B
+SWN-71 (5 valves)	A	+SWN-42 (5 valves)	AC

4.6 Sampling System (A206748)

4.6.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%956A	A	%956H	A
%956B	A	%958	A

\+ General Relief Request 2.2.1
% These valves will meet the Code for stroking only.

1840 302

Valve	Category	Valve	Category
%956C	A	%959	A
%956D	A	%990A	A
%956E	A	%990B	A
%956F	A	%990C	A
%956G	A		

4.6.2 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve	Valve
951	974A
953	974B
955A	975
955B	

4.7 Post Accident Containment Air Sampling System (Special pullout)

4.7.1 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+1875A	A	+1875F	A
+1875B	A	+1875G	A
+1875C	A	+1875H	A
+1875D	A	+1875J	A
+1875E	A		

4.8 Hydrogen Recombiner System (A206741)

4.8.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%1882A	A	%IV-5A	A
%4432	A	%4429	A
%IV-5B	A	%IV-3A	A
%4431	A	%IV-2A	A
%IV-3B	A	%IV-2B	A
%4430	A		

4.8.2 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

+ General Relief Request 2.2.1
% These valves will meet the Code for stroking only.

1840 303

Valve	Category	Valve	Category
+1882A	A	+1876B	A
+1876A	A	+1875B	A
+1875A	A		

4.9 Steam Generator Blowdown and Sampling System (A206742)

4.9.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%PCV-1223	A	%PCV-1214	A
%PCV-1223A	A	%PCV-1214A	A
%PCV-1224	A	%PCV-1215	A
%PCV-1225	A	%PCV-1215A	A
%PCV-1225A	A	%PCV-1216	A
%PCV-1226	A	%PCV-1216A	A
%PCV-1226A	A	%PCV-1217	A
%PCV-1224A	A	%PCV-1217A	A

4.10 Waste Disposal System (A206737)
(A206743)

4.10.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%1786	A	%1702	A
%1787	A	%1705	A
%1610	A	%1728	A
%1788	A	%1723	A
%1789	A		

4.10.2 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category
+1616	AC

4.11 Main Steam System (A206734)

4.11.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
PCV-1139	B	MS-47	C
4CV-1118	B	(4 valves)	

1840 304

+ General Relief Request 2.2.1
% These valves will meet the Code for stroking only.

Valve	Category	Valve	Category
MS-45 (4 valves)	C	MS-48 (4 valves)	C
MS-46 (4 valves)	C	MS-49 (4 valves)	C

4.11.2 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve	Valve
PCV-1135	PCV-1137
PCV-1134	MS-52
PCV-1136	

4.11.3 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
MS-41	B	PCV-1310	B
MS-42	B	PCV-1310B	B

4.11.4 The following are valves in the IST submittal that cannot be full stroke exercised every 3 months but will meet the requirements of Section XI. Additional information is required by the NRC to verify the impracticality of full stroke exercising every 3 months.

Valve	Category	Valve	Category
%MS-1-21	BC	%MS-1-23	BC
%MS-1-22	BC	%MS-1-24	BC

4.12 Boiler Feedwater System (A206736)

4.12.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
FCV-406A	B	FCV-405D	B
FCV-406B	B	FCV-1123	B
FCV-406C	B	FCV-1121	B
FCV-406D	B	PCV-1213	B
FCV-405A	B	BFD-74	B
FCV-405B	B	BFD-51	E
FCV-405C	B		

% The licensee must provide a relief request with technical justification to allow stroke timing of these valves at refueling outages in lieu of stroke timing at cold shutdown.

4.12.2 The following are valves that were not listed in the IST submittal and were agreed upon to be considered safety related and therefore will be added to the resubmittal as shown.

Valve	Category	Valve	Category
BFD-39	C	BFD-40	C
BFD-34	C	BFD-79	C
BFD-37	C	(4 valves)	
BFD-35	C	BFD-47	C
BFD-42	C	(4 valves)	
BFD-31	C		

4.12.3 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve
BFD-69
BFD-77
BFD-78

4.12.4 The following are valves in the IST submittal that cannot be full stroke exercised every 3 months but will meet the requirements of Section XI. Additional information is required by the NRC to verify the impracticality of full stroke exercising every 3 months.

Valve	Category	Valve	Category
%FCV-427	B	%FCV-417	B
%FCV-437	B	%FCV-447	B

4.12.5 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
FCV-427L	B	BFD-35	C
FCV-417L	B	BFD-42	C
FCV-437L	B	BFD-40	C
FCV-447L	B	BFD-79	C
BFD-39	C	(4 valves)	
BFD-37	C	BFD-47	C
BFD-31	C		

4.13 Condensate and Boiler Feedpump System (A206735)

4.13.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

% FCV-417, 427, 437 and 447. Licensee to address stroke timing.

1840 306

Valve	Category	Valve	Category
%PCV-1188	B	%PCV-1189	B
%PCV-1187	B	%LCV-1158	B

4.13.2 The following are valves that were not listed in the IST submittal and were agreed upon to be considered safety related and therefore will be added to the resubmittal as shown.

Valve	Category	Valve	Category
CT-32	C	%CT-33	E
CT-26	C	%CT-27	E
CT-29	C	%CT-30	E
%CT-6	E		

4.13.3 The following are valves that were listed in the IST submittal and were deleted from the IST program as being non-safety related (safety related as defined by "NRC Staff Guidance for Preparing Pump/Valve Testing...," dated January 13, 1978).

Valve
CT-35 (3 valves)

4.13.4 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category
CT-32	C
CT-26	C
CT-29	C

4.14 Miscellaneous CIV's

4.14.1 The following are valves in the IST program which the licensee intends to test to the applicable code requirement.

Valve	Category	Valve	Category
%E-1	A	%PCV-1229	A
%E-2	A	%PCV-1230	A
%E-3	A	%1234	A
%E-5	A	%1235	A
%1190	A	%1236	A
%1191	A	%1237	A
%1192	A		

% PCV-1187, 1188 and 1189, LCV-1158. Licensee will review these valves for safety related function.

% CT-6, CT-30, CT-33 and CT-27. Added to program if locked open. Otherwise will not be added to program.

% All valves in Section 4.14.1 will meet the Code for stroking only.

4.14.2 The following are valves in the IST submittal that cannot meet the requirements of Section XI and relief has been requested.

Valve	Category	Valve	Category
+85A	AC	+MV-17	A
+85B	AC	(2 valves)	
+85C	A	+SA-24	A
+85D	A	(2 valves)	
+95A	AC	+PCV-1228	A
+95B	AC	+IA-39	AC
+95C	A	+1170	A
+95D	A	+1171	A
+1814A	AE	+1172	A
+1814B	AE	+1173	A
+1814C	AE	+UH-43	AE
+UH-44	AE		

+General Relief Request 2.2.1

5.0 MISCELLANEOUS COMMENTS

5.1 Augmented Inspections of Valves

It is recommended that the Nuclear Regulatory Commission (NRC) take a position of requiring augmented inspections for valves that are currently designated as Category E in this IST program, and are proven to be of safety significance.

The Code, to date, has not addressed the generic function of these valves during an accident situation. It is most essential that these safety related valves be in the correct position during an accident situation. Safety related is defined by "NRC Staff Guidance for Preparing Pump and Valve testing...," dated January 13, 1978. This definition states "safety related are those pumps and valves necessary to safely shutdown the plant or mitigate the consequences of an accident." Should these valves be in the incorrect position a safe shutdown may not be possible. The Code chooses to ignore this type of valve with statements of the form: "IWV-1300 Exclusions. Valves that are not covered by this Subsection include valves used for operating convenience only such as manual vent, drain, instrument and test valves and valves used for maintenance only."

It is inconsistent to be concerned solely with the operability of some valves (Category A, B, C, and D) when others (Category E valves incorrectly positioned) will nullify the operation of the pumps and Category A, B, C, and D valves. In light of recent events this inconsistency should be addressed and resolved.

The concept of "augmented inspection" is to have periodic visual inspections, with written records, of the position of the valves. This concept might be a method of standardizing the procedures relating to passive valves (Category E, and non-Category E type), position verification. Valves that the NRC should be concerned with are Category E, and non-Category E type valves, such as on the accumulator discharge outlets, valves on either side of safety related pumps, and valves in the ECCS injection path or recirculation path (RWST to RCS, pump to RCS, Emergency Feedwater flow path).

This concept of augmented inspections is not original, the NRC stated it could be used in its November 17, 1976 letter to the Power Authority of the State of New York. This was a generic letter that went to all operating plants. The topic of the letter was NRC Staff Guidance for Complying with 10 CFR 50.55a(g) - Inservice Inspection Requirements.

5.2 Specific Valves Requiring Augmented Inspection

As stated in the May 15, 1979 letter to Mr. Alan Wang, NRC from Mr. Thomas Restivo, BNL, there are at least seven valves which BNL has reservations concerning their deletion from the IST Program. It is

1840 309

BNL's concern that valves 882, 1810, 894A, 894B, 894C, 894D, and 898 remain in the IST program and furthermore, it is recommended that an Augmented Inspection requirement be placed on these valves.

5.3 Miscellaneous Comments - For Pumps

1. The licensee was requested and has agreed to review the turbine driven Auxiliary Feedwater Pump for possible inclusion in the IST Program.

The following paragraphs and notes are found in the Inservice Inspection and Testing Program Supplement No. 3 dated February, 1979:

2. Paragraph 2.2, page E5-1 is not a relief request. It is presented for information purposes.

3. Paragraph 3.1, page E5-2 is not a relief request. It is presented for information purposes.

4. Note-7, page E5-7 is not a relief request. It is presented for information purposes.

5. Note-5, page E5-7 has been deleted as a relief request against the Auxiliary Component Cooling Pumps.

6. Note-6, page E5-7 is not a relief request. It is presented for information purposes.

1840 310

CONCLUSION

The Inservice Testing Program submitted by the Consolidated Edison Company of New York, Inc. for the Indian Point Station, Unit 2 and modified by this evaluation report is in general compliance with the requirements of Section XI of the 1974 Edition and Addenda through the Summer of 1975 of the ASME Boiler and Pressure Vessel Code as required by 10 CFR 50.55 a(g), and NRC Staff Guidance letters and briefings. Those items not found to be in compliance with the above, will be addressed in the licensee's response to the SER meeting and evaluated further.

1840 311

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1840 312

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