ENCLOSURE 1

# SAFETY EVALUATION

## RELATED TO REQUESTS FOR RELIEF FROM INSERVICE TESTING REQUIREMENTS

## IOWA ELECTRIC LIGHT AND POWER COMPANY

## DUANE ARNOLD ENERGY CENTER

## DOCKET NO. 50-331

### Introduction

Technical Specification 4.6.G.2 for the Duane Arnold Energy Center states that inservice testing (IST) of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda, as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the NRC pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

By letter dated March 1, 1978, Iowa Electric Light and Power Company (the licensee) submitted its pump and valve inservice testing program for the period June 1, 1978, to July 1, 1982, which was based on the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition, through the Summer of 1975 Addenda. This program was revised by letters from the licensee dated May 14, 1980 (Revision 2), November 11, 1980 (Revision 3), and December 8, 1982 (Revision 4). Revision 4 extended the program period to May 31, 1984, and is based on the 1980 Edition of the Code, through the Winter 1980 Addenda.

In its December 8, 1982 submittal, the licensee requested relief from certain requirements of the 1980 Edition of the Code, through the Winter 1980 Addenda. This Safety Evaluation addresses the relief requests associated with Revision 4 of the licensee's IST program.

### Evaluation

Revision 2 of the licensee's IST program and associated requests for relief were reviewed by the staff's contractor EG&G Idaho, Inc. The contractor's evaluations of and recommendations on the surveillance program and relief requests are presented in its Technical Evaluation Report (TER) (Attachment 1). The staff has reviewed the TER and agrees with the contractor's findings and approves the recommended actions as they apply to Revision 4 of the licensee's IST program. A summary of the determinations made by the staff concerning the licensee's relief requests related to Revision 4 is presented in Sections A through F of this Safety Evaluation.

### A. Requested Relief Granted

Relief is granted as requested for the testing of the pumps and valves listed below.

| Relief Request No. | Component | Relief Granted |
|---|---|---|
| PR-1 | 1P-44A<br>1P-44B | Pump vibration and bearing temperature not measured. |
| PR-4 | 1P-22A, B, C, D<br>1P-99A, B<br>1P-117A, B, C, D<br>1P-44A, B | One inlet pressure per test. |
| PR-5 | 1P-117A, B, C, D<br>1P-211A, B<br>1P-216<br>1P-226<br>1P-229A, B, C, D | Use of pump curves to determine hydraulic characteristics. |
| PR-6 | 1P-44A, B | Collect test data as soon as pump reaches stable operation. |
| VR-1 | MO-4841A, B | Relief not required. Test schedule (cold shutdown) meets code requirement. |
| VR-2 | Solenoid and air pilot operators where no position indications is available. | Stroke times not measured directly. |
| VR-4 | MO-4442<br>MO-4441 | Relief not required. Test schedule (cold shutdown) meets code requirement. |
| | VR-14-1<br>VR-14-3 | Exercise closed during refueling outage. |
| VR-5 | PSV-4400 thru<br>PSV-4407 | Tailpipe temperature indicates leak tightness. |
| VR-6 | PSV-4400 thru<br>PSV-4407 cycle.<br>SV-4400 thru<br>SV-4407 | Exercise once per operating cycle. No stroke times measured. |
| VR-7 | PSV-4439A<br>thru PSV-4439F | Exercise concurrent with setpoint verification tests. |
| VR-8 | Excess Flow<br>Check Valves | Exercise closed during refueling outage. |
| VR-9 | MO-4627<br>MO-4628 | Relief not Required. Test schedule (cold shutdown) meets code requirement. |

| Relief Request No. | Component | Relief Granted |
|---|---|---|
| VR-10 | MO-4629<br>MO-4630 | Relief not required. Test schedule (cold shutdown) meets code requirement. |
| VR-11 | CV-4327A thru<br>CV-4327H | Valve leak test accomplished during containment integrity tests. |
| VR-12 | V-17-83<br>V-17-93 | Exercise during refueling outage. |
| VR-13 | V-18-1453 thru<br>V-18-1541<br>V-18-118 thru<br>V-18-206<br>V-18-919 thru<br>V-18-1007 | Proper operation demonstrated during scram testing. |
| VR-14 | SV-1851<br>SV-1852<br>SV-1853<br>SV-1854 | Weekly tests and perodic scram testing demonstrate valves are closed and operating properly. |
| VR-15 | MO-1900<br>MO-1901<br>MO-1908<br>MO-1909 | Relief not required. Test schedule (cold shutdown) meets code requirement. |
| VR-16 | CV-1906<br>CV-2002<br>CV-2313<br>CV-2513 | Relief not required. Test schedule (cold shutdown) meets code requirement. |
| VR-17 | Valves equipped to fail open or closed. | Normal stroking to fail-safe position constitutes fail-safe test. |
| VR-18 | SV-2219 | Stroke timing not required. Operability verified by drain pot alarm. |
| VR-19 | V-14-32, 100, 104, 108, 112, 116, 120, 124, 9, 14, 15, 16. | Exercise during refueling outage. |
| VR-20 | V-26-08<br>V-26-09 | Exercise during refueling outage. |
| VR-21 | V-23-01<br>V-25-01 | Disassemble and test during refueling outage. |

| Relief Request No. | Component | Relief Granted |
|---|---|---|
| VR-22 | PSV-4400 thru PSV-4407 | Relief not required. Test schedule meets code requirement. |
| VR-23 | CV-4428<br>CV-4429<br>SV-4428<br>SV-4429 | Relief not required. Test schedule (cold shutdown) meets code requirement. |
| VR-24 | V-43-82<br>V-43-84<br>V-43-86<br>V-43-88 | Exercise valve for operability during refueling outage. |
| VR-25 | V-43-214 | Full stroke exercise during refueling outage. |
| VR-26 | V-22-16, 21, 63, 64<br>V-24-23, 46, 47 | Relief not required. Test schedule (cold shutdown) meets code requirements. |
| VR-27 | V-43-32<br>V-43-35 | Relief not required. Test schedule (cold shutdown) meets code requirements. |
| VR-28 | TIP-SHA, SHB, SHC<br>XS-2618A, B | No relief required. |
| VR-30 | V-17-52<br>V-17-53 | Verify closed position during refueling outage. |
| VR-31 | TIP-CK | Full stroke exercise during refueling outage. |
| VR-32 | SV-8101A thru SV-8110A<br>SV-8101B thru SV-8110B | Verify close position (i.e., full stroke) during refueling outage. |

B. Requested Relief Denied

The requested relief described in VR-2 and VR-13 is denied on the basis of insufficient justification.

Relief Requests VR-3 and VR-29 request relief from establishing maximum leak rates for individual valves subject to 10 CFR 50, Appendix J, Type C leak rate testing. It is the staff position that while Sections IWV-3421 through IWV-3425 of Section XI are adequately met by Appendix J of 10 CFR 50 for CIVs, Sections IWV-3426 and IWV-3427 still apply.

The components listed below should be tested in accordance with the Code.

| Relief Request No. | Component | Relief Denied |
|---|---|---|
| VR-2 | Solenoid and air pilot operators where positions indication is available. | Stroke times not to exceed 5 seconds. |
| VR-3 | Category A and A/C CIVs. | Sum of Appendix J Type B and C leakage not to exceed 0.6 $L_a$. |
| VR-13 | CV-1849<br>CV-1850 | Measure valve stroke time each refueling outage. |
| VR-29 | CV-2211, 2410, 3704, 3729, 4301, 4311, 4639.<br>MO-1900, 1908, 2717, 2137, 2238, 4423. V-09-11 | See VR-3 above. |

C. Pumps and Valves Requiring Alternate Testing

Although the licensee provided justification for not meeting the code, permanent relief is not granted at this time for the following pumps and valves pending supplemental information. The licensee is required investigate methods (plant modifications, etc.) by which Code requirements can be satisfied and is expected to submit alternate proposals for staff review within the time periods indicated. Response within three months means three months from the date of this letter. Relief is granted until such time as the staff has reviewed and evaluated these proposals.

| Relief Request No. | Component | Evaluation | Response |
|---|---|---|---|
| PR-2 | 1P-99A<br>1P-99B | Licensee investigate measurement of oil temperature in lieu of bearing temperature. | Within 3 months |
| PR-3 | 1P-216<br>1P-226 | Licensee investigate installation of permanent, remote reading instrumentation to measure vibration and bearing temperature. | Within 3 months |

| Relief Request No. | Component | Evaluation | Response |
|---|---|---|---|
| PR-7 | 1P-44A, B<br>1P-117A, B, C, D<br>1P-211A, B<br>1P-216<br>1P-226 | Licensee replace existing instrumentation with that meeting code requirements. | When existing instrumentation requires replacement. |
| VR-8 | Excess flow check valves | Licensee provide definitive leak rate acceptance criteria. | Within 6 months |
| VR-11 | CV-4327A thru CV-4327H | Licensee investigate methods for determining individual valve performance. | Within 6 months |
| VR-29 | CV-2211, 2410, 3704, 3729, 4301, 4311, 4639.<br>MO-1900, 1908, 2117, 2137, 2238 4423.<br>V-09-111 | Licensee provide technical data to support leak testing in direction opposite to one in which containment isolation is performed. | Within 6 months |

D. Valves Requiring Pressure Isolation Verification

The valves listed below perform a pressure isolation function between high and low pressure systems and the staff has determined that verification of this capability, beyond the exercising requirements of the Code, by the licensee is necessary. The licensee is expected to select a method to be used in determining the condition of each of these valves and submit it for staff review within six months of the date of this letter. Possible methods include pressure monitoring, leak testing, radiography and ultrasonic testing. If leak testing is selected as the desirable method, these valves should be classified as A or AC and tested in accordance with IWV-3420 of the Code.

| | | |
|---|---|---|
| CV-1906 | *MO-1900 | *V-19-005 |
| CV-2202 | *MO-1901 | |
| CV-2118 | MO-1905 | |
| CV-2138 | MO-1908 | |
| | MO-1909 | |
| | MO-2003 | |
| | MO-2117 | |
| | MO-2137 | |

*Any two of these three.

E. Components to be Added to the IST Program

Valves MO-4601 and MO-4602 (reactor recirculation pump suction isolation valves) were deleted from the IST program in Revision 4. These valves are Class 1 valves. In accordance with Technical Specification 4.6.G.2, Class 1 valves are to be tested in accordance with Section XI of the Code unless specific written relief has been granted by the NRC. Accordingly, these valves shall be tested per the Code until relief has been requested by the licensee and granted by the NRC.

F. Clarification of IST Program Tabulations

Several items in the IST program require clarification. These items were discussed with the licensee and the staff's understandings (and basis of this evaluation) are listed below. The licensee is required to confirm these items in writing within 3 months of the date of this letter.

| Component | Clarification |
|---|---|
| V-24-8<br>V-24-12 | These valves are verified to be in their safety related position during the monthly test of the RCIC pump. A note should be added to the program tabulation to clarify this item. |
| CV-5719A<br>CV-5719B<br>CV-5703A<br>CV-5703B | These valves are no longer in use and locked closed. |
| CV-2118<br>CV-2138 | These valves are tested during cold shutdown rather than during operation as indicated in the tabulation. |

Summary

Based on the review summarized herein, the staff concludes that the additional testing imposed, the relief granted and alternate testing imposed through this document, for Code requirements that are considered impractical give reasonable assurance that the pump and valve operational readiness intended by the Code will be satisfied. Additionally, we have concluded that this relief does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, and that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner.

Environmental Consideration

We have determined that granting relief from specific ASME Section XI Code requirements does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination we have further concluded that this is an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the granting of this relief.

## Conclusion

We have concluded, based on the considerations discussed above, that: (1) because this action does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the action does not involve a significant hazards consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

## Contributors

The following NRC personnel contributed to this Safety Evaluation: R. Hasse, F. Apicella, and J. Page.

Date: September 26, 1983

Attachment:
TER

EGG-EA-5280

January 1981

# SAFETY EVALUATION REPORT, INSERVICE TESTING PROGRAM, DUANE ARNOLD ENERGY CENTER - DOCKET NO. 50-331

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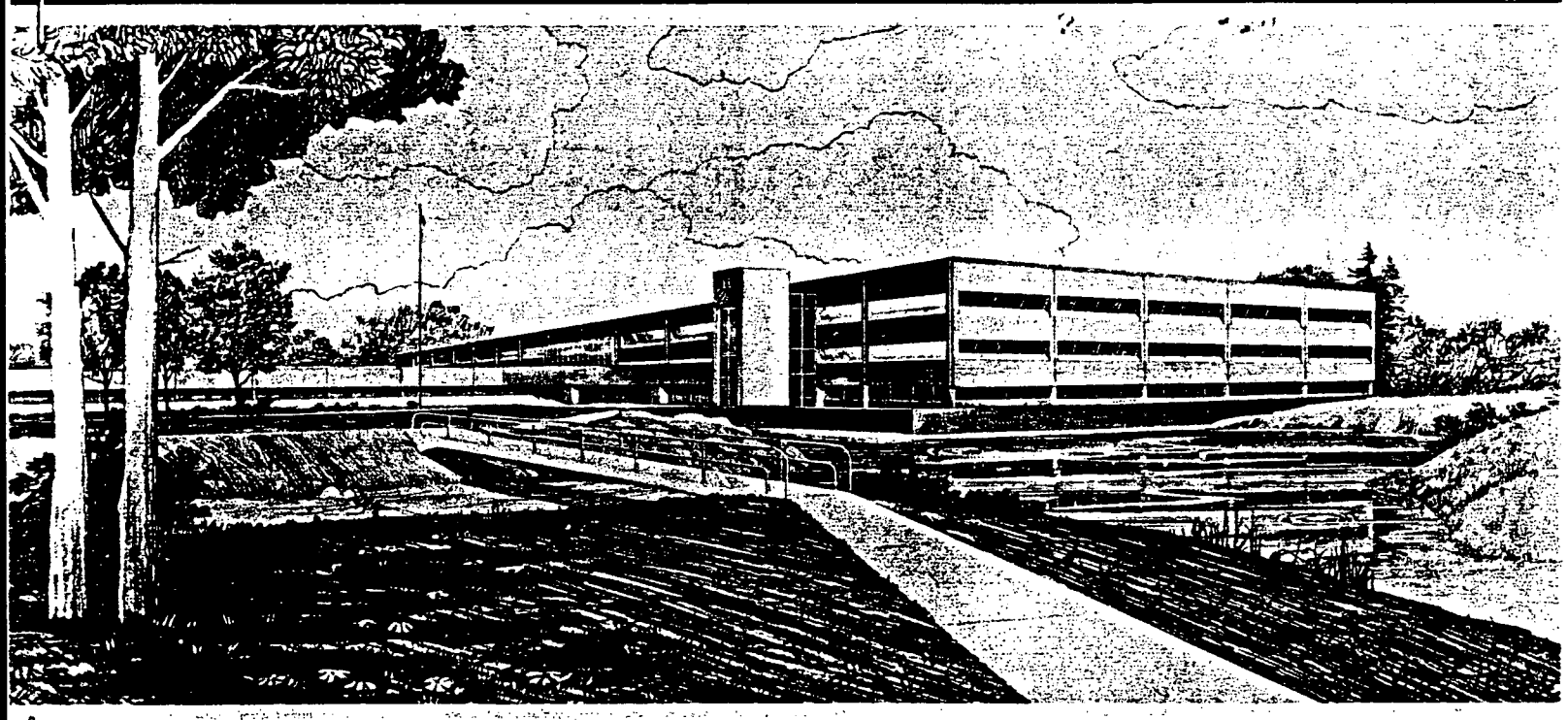





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# INTERIM REPORT

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**INTERIM REPORT**

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## I. Introduction

Contained herein is a safety evaluation of the pump and valve inservice testing (IST) program submitted by the Iowa Electric Light and Power Company (IE) for its Duane Arnold Energy Center. The program applies to Duane Arnold for the period June 1, 1978 to July 1, 1982. The working session with IE and Duane Arnold representatives was conducted on January 24 and 25, 1980. The licensee resubmittal was received by EG&G Idaho Inc. on June 2, 1980 and reviewed to verify compliance of proposed tests of safety related class 1, 2, and 3 pumps and valves with requirements of the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition, through the Summer of 1975 Addenda. IE has also requested relief from the ASME Code from testing specified pumps and valves because of practical reasons. These requests have been evaluated individually to determine whether they have significant risk implications and whether the tests, as required, are indeed impractical.

The evaluation of the pump testing program and associated relief requests is contained in Section II; the evaluation of the valve testing program and associated relief requests is contained in Section III. All evaluations for Sections II and III are the recommendations of EG&G Idaho, Inc.

Appendix J exemption requests for Category A valves that should be reviewed by the NRC are contained in Attachment I.

Category A, B, and C valves that meet the requirements of the ASME Code Section XI and are not exercised every 3 months are contained in Attachment II.

A listing of P&ID's used for this review are contained in Attachment III.

Relief requests with insufficient technical basis where relief is not recommended and potential NRC guideline conflicts are summarized in Attachment IV.

Items discussed via telephone after the IST meeting with the licensee that result in changes to their program and may appear as differences between their IST program and this report are detailed in Attachment V.

II. Pump Testing Program

The IST program submitted by IE was examined to verify that Class 1, 2, and 3 safety related pumps were included in the program and that those pumps are subjected to the periodic tests as required by the ASME Code, Section XI. Our review found that Class 1, 2, and 3 safety related pumps were included in the IST program and, except for those pumps identified below for which specific relief from testing has been requested, the pump tests and frequency of testing comply with the code. Each IE basis for requesting specific relief from testing and the EG&G evaluation of that request is summarized (A and B) below and grouped according to the system in which the pumps reside.

A. HPCI and RCIC Pumps

1. Relief Request

Specific relief is requested from the requirements of Section XI for measuring vibration and bearing temperatures on the HPCI and RCIC pumps.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

The HPCI and RCIC pumps are both driven by high speed turbines and are physically located in individual pump rooms with single entrances. Additionally, a rupture disc on the

turbines' exhaust line exists in each of these pump rooms. We feel it is a personnal safety hazard to be in the pump rooms during turbine operation. Relief is requested from the measurement of turbine vibration and bearing temperatures until remote indications are installed for monitoring these parameters.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the requirements of Section XI for measurement of HPCI and RCIC pump vibration and bearing temperatures. We feel that personnel entry into the HPCI or RCIC pump rooms during pump operation would endanger the safety of those personnel entering the room. We feel relief should be granted until the licensee has installed the appropriate remote indicating devices for monitoring pump performance.

B. Diesel Fuel Oil Transfer Pumps

1. Relief Request

Specific relief is requested from the requirements of Section XI for measuring vibration and bearing temperatures on the diesel fuel oil transfer pumps.

Code Requirement

An inservice test shall be conducted on all safety related pumps, nominally once each month during normal plant operation. Each inservice test shall include the measurement, observation, and recording of all quantities in Table IWP-3100-1, except bearing temperature, which shall be measured during at least one inservice test each year.

Licensee's Basis for Requesting Relief

These pumps are physically located inside the diesel fuel storage tanks and are inaccessible for measuring vibration and bearing temperatures.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the requirements of Section XI for measuring vibration and bearing temperature for the diesel fuel oil transfer pumps. We feel that verification of the pumps' ability to refill the diesel day tank at a rate faster than fuel consumption by the diesel adequately demonstrates pump operability. Additionally, one diesel fuel oil transfer pump can fill either diesel generator day tank.

## III. Valve Testing Program Evaluation

The IST program submitted by IE was examined to verify that Class 1, 2, and 3 safety related valves were included in the program and that those valves are subjected to the periodic tests required by the ASME code, Section XI, and the NRC positions and guidelines. Our review found that Class 1, 2 and 3 safety related valves were included in the IST program and, except for those valves identified below for which specific relief from testing has been requested, the valve tests and frequency of testing comply with the code requirements and the NRC positions and guidelines listed in General Section A. Also, included in the General Section A is the NRC position and valve listings for the leak testing of valves that perform a pressure isolation function and a procedure for the licensee's use to incorporate these valves into the IST program. Each IE basis for requesting specific relief from testing valves and the EG&G evaluation of that request is summarized (B through G) below and grouped according to each specific system.

### A. General Considerations

#### 1. Testing of Valves Which Perform a Pressure Isolation Function

Several safety systems connected to the reactor coolant pressure boundary have design pressures below the reactor coolant system operating pressure. Redundant isolation valves within the Class 1 boundary forming the interface between these high and low pressure systems prevent the low pressure systems from pressures which exceed their design limit. In this role, the valves perform a pressure isolation function.

The NRC considers the redundant isolation provided by these valves to be important. The NRC considers it necessary to ensure that the condition of each of these valves is adequate to maintain this redundant isolation and system integrity. For these reasons, the NRC believes that some method, such as pressure monitoring, leak testing, radiography or ultrasonic testing should be used to ensure the condition of each valve is satisfactory in maintaining this pressure isolation function.

If leak testing is selected as the apropriate method for achieving this objective, the NRC and EG&G Idaho, Inc. believe that the following valves should be categorized as A or AC and leak tested according to IWV-3420 of Section XI of the applicable edition of the ASME Code. These valves are:

| | | |
|---|---|---|
| CV-1906 | CV-2138 | V-19-5 |
| MO-1905 | MO-2137 | MO-1900 |
| MO-1908 | CV-2118 | MO-1901 |
| MO-1909 | MO-2117 | (any two of the above three) |
| CV-2002 | | |
| MO-2003 | | |

The NRC and EG&G Idaho, Inc. have discussed this matter with the licensee and identified the valves listed above. The licensee agreed to consider testing and categorizing each of these valves with the appropriate designation depending on the testing method selected. Whatever method the licensee selects for determining the condition of each valve, the licensee will provide to the NRC for evaluation the details of the testing method which clearly demonstrates the condition of each valve.

2. ASME Code Section XI Requirements

Subsection IWV-3410-(a) of the Section XI Code (which discusses full stroke and partial stroke) requires the 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-3520(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 power operation.

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

3. Stroke Testing of Check Valves

The NRC stated its position to the licensee that check valves whose safety function is to open are expected to be full stroked. If only limited operation is possible (and it has been demonstrated by the licensee and agreed to by the

NRC) the check valves shall be partial-stroked. Since disc position is not always observable, the NRC staff stated that verification of the plant's safety analysis design flow rate through the check valve would be an adequate demonstration of the full-stroke requirement. Any flow rate less than design will be considered part-stroke exercising unless it can be shown that the check valve's disc position at the lower flow rate would be equivalent to or greater than the design flow rate through the valve. The licensee agreed to conduct flow tests to satisfy the above position.

4. Test Frequency of Check Valves Tested at Cold Shutdowns

The Code states that, in the case of cold shutdowns, valve testing need not be performed more often than once every three months for Category A and B valves and once every nine months for Category C valves. It is our position that the Code is inconsistent and that Category C valves should be tested on the same schedule as Category A and B valves. The licensee has agreed to modify his procedures on cold shutdowns to read, "In the case of frequent cold shutdowns, valve testing will not be performed more often than once every three (3) months for Category A, B and C valves."

5. Licensee Request for Relief to Test Valves at Cold Shutdown

The Code permits valves to be tested at cold shutdown, and the Code conditions under which this is permitted is noted in Appendix A. These valves are specifically identified by the licensee and are full stroke exercised during cold shutdowns; therefore, the licensee is meeting the requirements of the ASME Code. Since the licensee is meeting the requirements of the ASME Code, it will not be necessary to grant relief; however, during our review of the licensee's IST program, we have verified that it was not practical to exercise these valves during power operation and that we agree with the licensee's basis.

It should be noted that the NRC differentiates, for valve testing purposes, between the cold shutdown mode and the refueling mode. That is, for testing purposes the refueling mode is not considered a cold shutdown.

6. Changes to the Technical Specification

In a November 1976 letter to the licensee, the NRC provided an attachment entitled, "NRC 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 Emergency Core Cooling System (ECCS) is inoperable, nonredundant valves in the remaining train should not be cycled if their failure in a non-safe position would cause a loss of total system function. For example, during power operation in some plants, there are stated minimum requirements for systems which allow certain 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 Specifications (T.S.), 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 could be contrary to the NRC guideline as stated in the document mentioned above. It should be noted that reduction in redundancy is not a basis for a T.S. change nor is it by itself a basis for relief from exercising in accordance with Section XI.

The licensee has agreed to review the plant's T.S. and to consider the need to propose T.S. changes which would have the effect of precluding such testing.

After making this review, if the licensee determines that the T.S. should be changed because the guidelines are applicable, the licensee will submit to the NRC, in conjunction with the proposed T.S. change, the inoperable condition for each system that is affected which demonstrates that the valve's failure would cause a loss of system function or if the licensee determines that the T.S. should not be changed because the guidelines are not applicable or cannot be followed, the licensee will submit the reasons that led to their determination for each potentially affected section of the T.S.

7. Safety Related Valves

This review was limited to safety-related valves. Safety-related valves are defined as those valves that are needed to mitigate the consequences of an accident and/or to shut down the reactor and to maintain the reactor in a shutdown condition. Valves in this category would typically include certain ASME Code Class 1, 2 and 3 valves and could include some non-code Class valves.

It should be noted that the licensee may have included non-safety related valves in their Inservice Test Program as a decision on the licensee's part to expand the scope of their program.

8. Valve Testing at Cold Shutdown

Inservice valve testing at cold shutdown is acceptable when the following conditions are met: It is understood that the licensee is to commence testing as soon as the cold shutdown condition is achieved but 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 any subsequent cold shutdowns that may occur before refueling to meet the Code specified testing frequency.

For planned cold shutdowns, where the licensee will complete all the valves identified in his IST program for testing in the cold shutdown mode, exceptions to the 48 hours may be taken.

9. 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 superseded by Appendix J requirements for CIVs. The NRC 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 problems since the intent of IWV-3420 (a-e) is met by Appendix J requirements.

The licensee shall comply with Sections f and g of IWV-3420 until relief is requested from these paragraphs. It should be noted that these paragraphs are only applicable where a Type C Appendix J leak test is performed.

Based on the considerations discussed above the NRC concludes that the alternate testing proposed above will give the reasonable assurance of valve operability intended by the Code and that the relief thus granted will not endanger life or property of the common defense and security of the public.

10. Application of Appendix J Testing to the IST Program

The Appendix J review for this plant is a completely separate review from the IST program review. However, the determinations made by that review are directly applicable to the IST program. Our review has determined that the current IST program as submitted by the licensee correctly reflects our interpretation of Section XI vis-a-vis Appendix J. The licensee has agreed that, should the Appendix J program be amended, they will amend their IST program accordingly.

B. Nuclear Boiler System

1. Category A/C Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for check valves V-14-1 and V-14-3, feedwater header to reactor vessel check valves.

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

These valves must be shut to fulfill the requirements of their testing category. Shutting either of these valves would shut off feedwater flow through its respective line. When feedwater is restored, (i.e. the valve reopened), the line's feedwater nozzles and feedwater spargers would undergo a severe thermal shock. This shock can cause cracking in, and possible failure of, the sparger and nozzles. The only practical means to verify valve closure is by conducting a leak rate test. Leak rate tests are beyond the scope of normal cold shutdown testing, but are routinely performed during refueling outages. As an alternate test, these valves will be exercised shut each refueling outage.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercisng requirements of Section XI for valves V-14-1 and V-14-3. The licensee has demonstrated that exercising these valves to their safety related position (shut) would result in severe thermal shocking of the feedwater spargers and nozzles and could result in ultimate failure of these reactor internal's components. During cold shutdown no practical means exists for exercisng these valves shut. However, during each refueling outage these valves are leak tested which demonstrates valve closure. Therefore, we feel the licensee's alternate test of exercising these valves shut during refueling outages meets the intent of the code.

C. Control Rod Drive Hydraulic System

1. Category A/C Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for valves V-17-83 and V-17-96, reactor recirculation pump seal purge lines check valves.

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

These valves cannot be remotely operated. They are located inside the containment structure, and are not accessible for testing during reactor operation. Additionally, the reactor containment is inerted with nitrogen during plant operation and is not routinely entered during cold shutdowns. Deinerting and then reinerting of the containment atmosphere each cold shutdown solely for the purpose of conducting valve testing would represent an extreme operational burden. Exercising these valves by utilizing outside drywell test lines would require venting the reactor recirculation pumps, which would, again, require containment entry. These valves can be exercised shut during leak rate testing performed during refueling outages. Therefore, as an alternate test frequency, these valves will be exercised shut during refueling outages.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for valves V-17-83 and V-17-96. The licensee has demonstrated that these valves cannot be exercised to their safety related position (shut) since containment entry would be required and the containment is inaccessable during power operation. We agree the only practical method of verification of valve closure is via a leak test. The licensee's proposed alternate test of leak testing these valves each refueling outage meets the intent of Section XI.

b. Relief Request

Specific relief is requested from the exercising requirements of Section XI for valves V-17-52 and V-17-53, control rod drive return isolation and backflow prevention check valves.

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

These valves are passive normally closed check valves which never have to change position to perform their safety related function. Therefore relief is requested from the exercising requirements of Section XI for these valves.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for valves V-17-52 and V-17-53. These valves are in their safety related position and are not required to open or close to mitigate the consequences of an accident or safely shut down the plant. Therefore, the operability of these valves is inconsequential with regard to the safety function they perform. We conclude that quarterly exercising is meaningless for passive valves.

2. Category B Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for valves CV-1849, scram supply header isolation control valves, and CV-1850, scram discharge header isolaion control valves. There are 89 of each of these valves.

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

Testing of these valves during reactor operation would cause the associated rod to scram. Testing of 89 rod control hydraulic units creates a large radwaste burden due to scram header waste discharge. Additionally, testing of 89 valves each cold shutdown would require excessive shutdown time solely to accomplish testing and significantly increase personnel radiation exposure.

Evaluation

We agree with the licensee's basis for not exercising these valves during power operation and therefore feel relief should be granted from the quarterly exercising requirements of Section XI for valves CV-1849 and CV-1850. However, we feel the licensee has not provided sufficient justification for not exercising these valves during cold shutdown. We feel the radwaste generated by exercising these valves would not pose an excessive burden on the plant and the licensee has not provided any information on what the increase in personnel radiation exposure would be. Therefore, we recommend that relief not be granted from the cold shutdown exercising requirements for these valves.

D. High Pressure Coolant Injection System

1. Category B Valves

a. Relief Request

Specific relief is requested from the exercising and stroke timing requirements of Section XI for valve SV-2219, HPCI steam drain pot level control valve.

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

This valve has no separate handswitch to operate it, but is operated automatically by a local controller. Also, it does not have any indication lights. As such, the valve cannot be directly operated to verify operability. However, during HPCI operation, indirect verification of its operability can be made by observing that the HPCI Drain Pot High Level Alarm comes in and then goes back out. This would mean the valve is actually opening and closing as required to maintain proper drain pot level. Stroke timing, however, cannot be done.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for valve SV-2219. The licensee has demonstrated that the code specified method of exercising this valve is impractical since operator control of the valve is not available and valve position indication does not exist. Observation of proper level control in the HPCI Drain pot during HPCI pump tests verifies that the valve does move to the positions required to perform its safety related functions. Therefore we feel this alternate test adequately verifies proper valve operation. Additionally, we feel relief should be granted from the stroke time measurement requirements for this valve since direct observation of valve position is not available.

2. Category C Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for valve V-23-01, HPCI Torus suction line check valve.

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

Normal HPCI water supply is from the Condensate Storage Tanks. The valves in the HPCI suction line from the Torus are normally shut. This prevents contaminating the clean HPCI system with the dirty water in the Torus. The entire HPCI system would be contaminated if the HPCI pump were to use the water in the Torus. Also, because the pump discharges to the CST's (which hold reactor grade water), they, too, would become contaminated. As such, to take a suction on the Torus via this line to prove the valve's operability would impose an excessive operating burden on the plant. The only feasible method of verifying this valve's operability is to disassemble it to ensure that it isn't stuck shut, or partially shut. This would necessarily entail that the HPCI pump could not use the Torus as a water supply while the inspection was performed. In order not to deprive the HPCI pump of this supply of water, this inspection should be

performed when the HPCI system is not required, i.e., during cold shutdowns or refuelings. Frequent disassembly of the valve (i.e., every cold shutdown) entails the risk of the valve being damaged during assembly/disassembly, or being put back together incorrectly. As an alternate test, this valve will be disassembled and inspected to ensure operability each refueling outage.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for valve V-23-01. The licensee has demonstrated that utilizing flow for exercising this valve would introduce "dirty" torus water into the reactor grade condensate storage water system and ultimately into the reactor coolant system. During cold shutdown the HPCI pump cannot be utilized to provide flow through this check valve since no steam is available to run the pump. Additionally, during cold shutdown the same torus water would be injected into the reactor coolant system. We feel the licensee's proposed alternate test of valve disassembly during refueling outages is sufficient to demonstrate valve operability.

E. Reactor Core Isolation Cooling System

1. Category B Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for valve HV-2406, RCIC turbine steam governing valve.

Code Requirement

Refer to Valve Testing Paragraph A.2.

Licensee's Basis for Requesting Relief

Position of this valve is controlled by the RCIC Flow Control Circuit. As such, testing of this valve, which could only be done with the system secured, would require the elaborate electrical manipulation of the Flow Control Circuit, which was not designed to afford such manipulation, and, physically, is not readily accessible. Furthermore, testing of this valve would require declaring the RCIC system inoperable since the steam supply valve (MO-2401) would have to be shut during testing to prevent the RCIC turbine from running away in the event of an initiation signal with the governor valve fully open. In addition, during normal RCIC turbine operation, the valve is cycled from fully shut to about 80% open, anyway. Valve operability will be verfied by observing that the RCIC turbine attains rated speed within a specific time. This will not then be a full stroke of the valve.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for valve MV-2406. We feel the licensee's monthly full flow test of the RCIC pump demonstrates the proper operation of this valve. We feel that the manipulation of the control circuitry to provide a 100% open valve position would not add to the assurance of valve operability since the present test verifies the valve opens to the position required to perform its safety related function.

2. Category C and C/E Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for Valve V-25-01, RCIC Torus suction line check valve.

Code Requirement

Refer to Valve Testing Paragraph A.2.

Licensee's Basis for Requesting Relief

Normal RCIC water supply is from the Condensate Storage Tanks. The valves in the RCIC suction line from the Torus are normally shut. This prevents contaminating the clean RCIC sytem with the dirty water in the Torus. The entire RCIC system would be contaminated if the RCIC pump were to use the water in the Torus. Also, because the pump discharges to the CST's (which hold reactor grade water), they, too, would become contaminated. As such, to take a suction on the Torus via this line to provide the valve's operability would impose an excessive operating burden on the plant. The only feasible method of verifying this valve's operability is to disassemble it and inspect it to ensure that it isn't stuck shut, or partially shut. This would necessarily entail that the RCIC pump could not use the Torus as a water supply while the inspection was performed. In order not to deprive the RCIC pump of this supply of water for emergencies, this

inspection should be performed when the RCIC system is not required, i.e., during cold shutdowns or refuelings. Frequent disassembly of the valve (i.e., every cold shutdown) entails the risk of the valve being damaged during assembly/disassembly, or being put back together incorrectly. As an alternate test this valve will be disassembled and inspected to ensure operability each refueling outage.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for valve V-25-01. The licensee has demonstrated that utilizing flow for exercising this valve would introduce "dirty" torus water into the reactor grade condensate storage water system and ultimately into the reactor coolant system. During cold shutdown the RCIC pump cannot be utilized to provide flow through this check valve since no steam is available to run the pump. Additionally, during cold shutdown the same torus water would be injected into the reactor coolant system. We feel the licensee's proposed alternate test of valve disassembly during refueling outages is sufficient to demonstrate valve operability.

F. Standby Liquid Control System

1. Category C Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for valves V-26-08 and V-26-09, SLCS to Reactor Vessel check valves.

Code Requirements

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

Testing this valve requires operating the SLCS pumps discharging directly to the reactor vessel, necessitating operation of the explosive system isolation valves and possibly contaminating the reactor coolant with sodium pentaborate. As an alternate test, these valves will be exercised each refueling outage.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for check valves V-26-08 and V-26-09. The licensee has demonstrated that exercising these valves would require operating the explosive valves and injecting sodium pentaborate into the RCS. Injecting this sodium pentaborate into the RCS would shutdown the reactor and cause extensive radwaste generation since this chemical would have to be flushed from the RCS prior to next startup. During refueling outages the Standby Liquid Control System can be flushed clean of this chemical and a full flow/full stroke test can be performed. We feel this will adequately demonstrate proper valve operabilility.

G. Various Reactor Instrumentation

1. Category C Valves

a. Relief Request

Specific relief is requested from the exercising requirements of Section XI for all excess flow check valves listed in the IST program (86 valves).

Code Requirement

Refer to valve testing paragraph A.2.

Licensee's Basis for Requesting Relief

Testing of XFV's necessitates removing the associated instrumentation from service for prolonged periods of time, thus placing the plant in an unsafe condition during normal operation. Additionally, this testing involves a total of 86 valves which would require excessive cold shutdown time solely to accomplish this testing and would greatly increase total personnel radiation exposure. As an alternate test, these valves will be exercised for operability each refueling outage.

Evaluation

We agree with the licensee's basis and therefore feel relief should be granted from the exercising requirements of Section XI for all excess flow check valves listed in the IST program (86 valves). Verification of operability of these valves could potentially require personnel exposure to high temperature, high pressure reactor coolant system water during power operation. However, we feel the proper method of verifying valve operability is via a leak test of these valves. Consequently we feel these valves should be categorized A/C and a leak test performed each refueling outage in addition to the exercising test.

VI. Attachment I

The following is a list of valves that we feel should be reviewed by the NRC to determine if these valves meet the Appendix J criterion for containment isolation. If any of these valves are determined to be Appendix J valves then they should be included in the IST program and categorized A, A/C or A/E as applicable.

MO-1933
MO-1934
MO-1970
MO-1902
MO-1905
MO-2000
MO-2006
MO-2007
MO-2038
MO-2003
MO-2124
MO-2104
MO-2112
MO-2132
CV-2118
CV-2138
MO-2318
MO-2321
MO-2510
MO-2516
V-26-08
V-26-09

V. Attachment II

The following are Category A, B, and C valves that meet the requirements of the ASME Code Section XI and are not full stroke exercised every three months during plant operation. These valves are specifically identified by the owner and are full stroke exercised during cold shutdowns and refueling outages. EG&G has reviewed all valves in this attachment and agrees with the licensee that testing these valves during power operation is not possible due to the valve type and location, system design, or because this action would place the plant in an unsafe condition. We feel these valves should not be exercised during power operation. These valves are listed below and grouped according to the system in which they are located.

A. Reactor Building Closed Cooling Water

1. Category A valves MO-4841A & B, RBCCW return and supply containment isolation valves, cannot be exercised during power operation since exercising these valves would isolate cooling water to the reactor recirculation pump motor cooling coils. Failure of either of these valves in the closed position would require the recirculation pumps to be tripped (stopped) to avoid motor damage. This would then cause a severe circulation water flow and pressure transient in the reactor, probably resulting in a reactor scram. These valves will be full stroke exercised and stroke timed during cold shutdowns and refueling outages.

B. Nuclear Boiler System

1. Category A/C valves MO-4441 and MO-4442, reactor feedwater containment isolation valves, cannot be exercised during power operation since this would shut off feedwater flow through its line and when feedwater flow is restored (i.e.,

the valve reopened) the line's feedwater nozzles and feedwater spargers would undergo a severe thermal shock. This shock can cause cracking and possible failure of the sparger and nozzles. These valves will be full stroke exercised and stroke timed during cold shutdowns and refueling outages.

C. Reactor Recirculation System

1. Category B valves MO-4627, MO-4628, MO-2601 and MO-2602, reactor recirculation pump discharge and suction isolation valves, cannot be exercised during power operation since shutting these valves would shut off all recirculation water flow in the associated loop and, due to an electrical interlock, trip the associated recirculation pump. This would cause a circulation water flow and pressure transient in the reactor, probably resulting in a reactor scram. These valves will be full stroke exercised and stroke timed during cold shutdowns and refueling outages.

2. Category B valves MO-4629 and MO-4630, reactor recirculation pump discharge bypass valves, cannot be exercised during power operation since these valves are normally shut during power operation, allowing stagnant water in the associated bypass line to cool and exercising these valves would severly thermal shock the bypass line and connecting weld joints which could cause cracking and utimate failure of the welds. These valves will be exercised during cold shutdowns and refueling outages since then the recirculaton loop and bypass line temperatures are essentially equalized.

D. RHR System

1. Category A valves MO-1908 and MO-1909, RHR system suction from RCS, cannot be exercised during power operation since these valves are interlocked to remain closed if reactor vessel pressure is greater than 135 psig. These valves will be full stroke exercised during cold shutdowns and refueling outages.

2. Category A valves MO-1900 and MO-1901, Reactor head spray isolation valves, cannot be exercised during power operation since these valves are interlocked with reactor pressure to prevent these valves from opening when reactor pressure is greater than 135 psig. These valves will be full stroke exercised during cold shutdowns and refueling outages.

3. Category B valves MO-1904 and MO-1905, "B" side LPCI injection valves, cannot be exercised during power operation since the LPCI logic system in this plant is set up with the 'B' loop prefered (i.e., if the leak detection system cannot figure out where a pipe break has occurred, water will be injected into the 'B' recirculation water loop via these LPCI valves). As such, if during exercising this valve, should it fail in the shut position, the entire LPCI system would become inoperable. These valves will be full stroke exercised during cold shutdowns and refueling outages.

4. Category C valves CV-1906 and CV-2002, RHR to RCS testable check valves, cannot be exercised during power operation since the air operators on these valves are unable to open them if the reactor coolant system is pressurized. These valves will be full stroke exercised during cold shutdowns and refueling outages.

E. Core Spray System

1. Category C valves CV-2118 and CV-2138, core spray headers to reactor vessel check valves, cannot be exercised during power operation since the air operators cannot open the valves if the reactor coolant system is pressurized. Additionally, the core spray pumps cannot develop enough pressure to open the valves with flow during power operation. These valves will be full stroke exercised during cold shutdowns and refueling outages.

F. High Pressure Coolant Injection System

1. Category A valves MO-2238 and MO-2239, steam supply to HPCI pump turbine isolation valves, cannot be exercised during power operation since failure of either of these valves in the shut position during testing would render the entire HPCI system inoperable. These valves will be full stroke exercised during cold shutdowns and refueling outages.

2. Category A/C valve V-22-21, HPCI drain pot drain line check valve, cannot be exercised shut during power operation since testing of this valve requires use of the leakage test valves downstream of it, and the shutting of stop check valve V-22-22. For the safety of the test personnel, then, the steam supply valve (MO-02238) must be shut for the duration of the test (HPCI initiation with V-22-22 shut would blow steam rupture discs in the HPCI Room and blow steam out an open leakage test valve, so endangering test personnel.) Additionally, the HPCI system would be rendered inoperable for the duration of the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

3. Category A/C valve V-22-16, HPCI steam line exhaust check valve, cannot be exercised shut during power operation since testing of this valve requires use of the leakage test valves downstream of it, and the shutting of stop check valve V-22-17. For the safety of the test personnel, then, the steam supply valve (MO-2238) must be shut for the duration of the test (HPCI initiation with V-22-17 shut would blow steam rupture discs in the HPCI Room and blow steam out an open leakage test valve, so endangering test personnel.) This would then require declaring the HPCI system inoperable for the duration of the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

4. Category C valve V-22-63, HPCI steam exhaust line vacuum breaker check valve, cannot be exercised during power operation since testing of this valve requires use of leakage test valve V-22-68 downstream of the valve, and the shutting of V-22-62. For the safety of test personnel, then, the steam supply valves of the HPCI system (MO-2338 and MO-2339) must be shut for the duration of the test (HPCI initiation with V-22-62 shut may cause sucking Torus water back up into the exhaust line, and blow steam out the open leakage test valve, so endangering test personnel.) This, then, would require declaring the HPCI system inoperable for the duration of the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

5. Category C valve V-22-64, HPCI steam exhaust line vacuum breaker check valve, cannot be exercised during power operation since testing of this valve requires use of leakage test valve V-22-67 downstream of the valve, and the shutting of V-22-62. For the safety of test personnel, then, the steam supply valves of the HPCI system (MO-2338

and MO-2339) must be shut for the duration of the test (HPCI initiation with V-22-62 shut may cause sucking Torus water back up into the exhaust line, and blow steam out the open leakage test valve, so endangering test personnel.) This, then, would require declaring the HPCI system inoperable for the duration of the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

6. Category C valve CV-2313, HPCI pump discharge to RCS check valve, cannot be exercised during power operation since the air operator on the valve cannot open the valve if the reactor coolant system is pressurized. Additionally, utilizing HPCI flow to exercise this check valve would inject relatively cold water into the reactor causing severe thermal stress on the injection nozzle. This valve will be full stroke exercised during cold shutdowns and refueling outages.

G. Reactor Core Isolation Cooling System

1. Category C valve V-24-23, RCIC steam line exhaust check valve, cannot be exercised during power operation since testing of this check valve requires use of the leakage test valves, and the shutting of stop check valve V-24-8. For the safety of the test personnel, then, the RCIC steam supply valves (MO-2400 and MO-2401) must be shut for the duration of the test (RCIC initiation with V-24-8 shut would blow steam rupture discs in the RCIC Room and blow steam out an open leakage test valve, so endangering test personnel.) This would then require declaring the RCIC system inoperable during the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

2. Category C valve V-24-46, RCIC steam exhaust line vacuum breaker check valve, cannot be exercised during power operation since testing of this valve requires use of leakage test valve V-24-48 downstream of the valve, and the shutting of V-24-45. For the safety of test personnel, then, the RCIC steam supply valves (MO-2400 and MO-2401) must be shut for the duration of the test (RCIC initiation with V-24-45 shut may cause sucking Torus water up into the RCIC steam exhaust line, and blow steam out the open leakage test valve, so endangering test personnel). This would require declaring the RCIC system inoperable for the duration of the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

3. Category C valve V-24-47, RCIC steam exhaust line vacuum breaker check valve, cannot be exercised during power operation since testing of this valve requires use of leakage test valve V-24-49 downstream of the valve, and the shutting of V-24-45. For the safety of test personnel, then, the RCIC steam supply valves (MO-2400 and MO-2401) must be shut for the duration of the test (RCIC initiation with V-24-45 shut may cause sucking Torus water up into the RCIC steam exhaust line, and blow steam out the open leakage test valve, so endangering test personnel). This would require declaring the RCIC system inoperable for the duration of the test. This valve will be full stroke exercised during cold shutdowns and refueling outages.

4. Category C valve CV-2513, RCIC pump discharge to RCS check valve, cannot be exercised during power operation since the air operator on the valve cannot open the valve if the reactor coolant system is pressurized. Additionally, utilizing RCIC flow to exercise this check valve would inject relatively cold water into the reactor causing severe thermal stress on the injection nozzle. This valve will be full stroke exercised during cold shutdowns and refueling outages.

H. Drywell Cooling Water System

1. Category A valves CV-5718A & B and CV-5704A & B, drywell cooling water supply and return isolation valves, cannot be exercised during power operation since failure of any of these valves to reopen after exercising would cause a partial loss of drywell cooling water which could damage the reactor recirculation pumps and other critical components supplies by this system. During power operation the heat load on this system is more than one loop can handle. These valves will be full stroke exercised during cold shutdowns and refueling outages.

2. Category A valves CV-5719A & B, drywell cooling water supply line drain containment isolation valves, cannot be exercised during power operation since failure of either of these valves to reclose during exercising would short cycle the cooling water from the components inside containment supplied by this system into the radwaste system. This could result in damage to the reactor recirculation pumps and other critical components requiring plant shutdown. The heat load on this system during power operation is more than one loop can handle. These valves will be full stroke exercised during cold shutdowns and refueling outages.

VI. Attachment III

Below is a listing of P&ID's and drawings utilized during the course of this review.

| System | P&ID No. | Revision |
|---|---|---|
| P&ID Piping Symbols | M-100 | 8 |
| Reactor Building Closed Cooling Water | M-112 | 9 |
| RHR Service Water & Emergency Service Water | M-113 | 14 |
| Nuclear Boiler | M-114 | 10 |
| Reactor Recirculation | M-116 | 9 |
| Control Rod Drive Hydraulic | M-117 | 14 |
| Control Rod Drive Hydraulic | M-118 | 7 |
| Residual Heat Removal | M-119 | 14 |
| Residual Heat Removal | M-120 | 12 |
| Core Spray | M-121 | 8 |
| High Pressure Coolant Injection | M-122 | 13 |
| High Pressure Coolant Injection | M-123 | 10 |
| Reactor Core Isolation Cooling | M-124 | 11 |
| Reactor Core Isolation Cooling | M-125 | 11 |
| Standby Liquid Control | M-126 | 6 |
| Reactor Water Cleanup | M-127 | 12 |
| Diesel Generator | M-132 | 11 |
| Radwaste Sump | M-137 | 11 |
| Containment Atmosphere Control | M-143 | 18 |
| Service Water System Pumphouse | M-146 | 12 |
| Drywell Cooling Water | M-157 | 8 |
| Containment Atmosphere Monitoring | M-181 | 8 |
| MSIV Leakage Control | M-184 | 5 |

VII. Attachment IV

A. The following relief requests have insufficient technical basis provided and relief is not recommended.

1. Valve Testing Program

a. C.2.a
b. G.1.a

B. The following are items we feel should be specifically identified to the NRC for potential guideline conflictions.

1. The licensee is presently exercising normally open valve MO-2311, HPCI discharge to RCS, quarterly and failure of this valve in the shut position could render the HPCI system inoperable.

2. The Duane Arnold IST program period identified on the cover letter for their May 14, 1980 program is specified as June 1, 1978 to July 1, 1982. This period is significantly longer than the 20 month period specified by the Code of Federal Regulations.

VIII. Attachment V

The following items were discussed via telephone with the licensee (Ken Harrington) on 2 October and 1 December, 1980 and the licensee agreed to send revised pages to the NRC to modify their IST program dated May 14, 1980.

A. Relief requests will be provided for not measuring vibration and bearing temperatures on the HPCI and RCIC pumps until remote indication is installed. At that time the relief requests will be withdrawn.

B. The test frequency for the river water pumps will be changed from quarterly to monthly.

C. The relief requests for valves V-17-52 and 53 will be modified to reflect that these valves are passive category A/C valves normally closed and never required to change position to perform their safety related function. Additionally, during the refueling outage scheduled for March 1981 this line will be capped and the valves will become non-safety related or removed.

D. We discussed the relief request for valves CV-1849 and CV-1850 (item C.2.a of this report) with the licensee and these discussions failed to generate an acceptable basis for granting relief from cold shutdown exercising of these valves.

E. The relief request for valve CV-2313 will be modified to reflect the contents of item F.6 of Attachment II of this report.

F. The relief request for valve V-24-8 will be deleted since the valve is verified in its safety related position during the monthly pump test of the RCIC pump.

G. The relief request for valve CV-2513 will be modified to reflect the contents of item G.4 of Attachment II of this report.

H. The "Testing Alternative" column for valves CV-5704A & B, CV-5718 A & B, and CV-5719A & B on pages 53 and 54 of the Duane Arnold IST program will be changed from "RR" to "CS". This change is to be consistent with the test frequency specified on the relief request.

I. The relief request for valves CV-2118 and CV-2138 will be modified to reflect the contents of item E.1 of Attachment II of this report. The test frequency of these valves will be changed fom refueling outages to cold shutdowns.

J. The relief requests for valves V-26-08 and V-26-09 will be modified to reflect the contents of "Licensee's Basis for Requesting Relief" of item F.1.a of this report.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-331

IOWA ELECTRIC LIGHT AND POWER COMPANY
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE

DUANE ARNOLD ENERGY CENTER

NOTICE OF GRANTING OF RELIEF FROM ASME SECTION XI
INSERVICE TESTING REQUIREMENTS

The U. S. Nuclear Regulatory Commission (the Commission) has granted relief from certain requirements of the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to Iowa Electric Light and Power Company (the licensee). The relief relates to the inservice testing program for the Duane Arnold Energy Center (the facility) located in Linn County, Iowa. The ASME Code requirements are incorporated by reference into the Commission's rules and regulations in 10 CFR Part 50. The relief is effective as of September 26, 1983.

The relief permits the licensee to test certain designated pumps and valves in a manner or on a schedule different from that prescribed in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda, as required by 10 CFR 50, because of inaccessibility, configuration of components, radiation level, or other valid reasons.

The request for relief complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings, as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the letter granting relief.

The Commission has determined that the granting of this relief will not result in any significant environmental impact and that, pursuant to 10 CFR §51.5(d)(4), an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this relief.

For further details with respect to this action see: (1) the application for relief dated March 1, 1978, as revised May 14, 1980 (Revision 2), November 11, 1980 (Revision 3), and December 8, 1982 (Revision 4); (2) the Commission's letter dated September 26, 1983; and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Cedar Rapids Public Library, 425 Third Avenue, S. E., Cedar Rapids, Iowa 52401. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555: Attention: Director, Division of Licensing.

FOR THE NUCLEAR REGULATORY COMMISSION

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Dated at Bethesda, Maryland
this 26th day of September, 1983.